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**THE CONSUMER'S OPINIONS OF  
THE FOOD SERVICE SYSTEM:  
THE 1973 MINOT AIR FORCE BASE SURVEY**

by

Laurence G Branch

and

Lawrence E Symington

Herbert L Meiselman

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June 1973

UNITED STATES ARMY  
NATICK LABORATORIES  
Natick, Massachusetts 01760



Pioneering Research Laboratory



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Air Force Representative  
DOD Food Program  
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## INTRODUCTION

During FY 1973-74, U.S. Army Natick Laboratories (NLABS) is conducting an investigation of Air Force Food Service under Task 03, Project Number 1J662713AJ45, Analysis and Design of Military Feeding Systems, and Task 03, Project Number 1J662713A034, Military Food Service and Subsistence Technology. Travis Air Force Base was selected as the principal study site, having been determined to best represent characteristics of Military Airlift Command (MAC) Air Force Food Service operations. Consumers' opinions of the Travis AFB MAC Food Service System are available as a separate report (Branch and Meiselman, 1973). Minot Air Force Base, North Dakota, was selected as one ancillary study site, representing both the characteristics of Strategic Air Command (SAC) food service operation and a different climatic environment. Homestead Air Force Base, Florida, (TAC) was selected as the third study site. Consumer opinions of the Minot AFB Food Service System are contained in this report. A comparison of the similarities and differences of the opinions across the Air Force Bases surveyed will be the topic of the final, summary report of this series.

The basic premise of the above project is that food service must be oriented toward and responsive to the consumer. The objectives, stated very simply, are to improve existing system performance, increase its effectiveness, and identify ways to reduce operating costs.

The overall approach employed for this project is as follows:

1. Perform initial system studies
  - a. system evaluation
  - b. consumer research (also Minot AFB and Homestead AFB)
  - c. environmental analysis
2. Define improvements to the system and evaluate each experimentally.
3. Recommend system improvements



The system evaluation is intended to define and characterize the current system in terms of concept, configuration and operations; and to establish the objectives, requirements, and constraints under which the system operates. Data are collected and analyzed on the various elements of the total system, e.g., facilities, equipment, personnel, operations, consumers and products. Performance and effectiveness are assessed to identify existing deficiencies and inefficiencies in the system, to determine possible alternative improvements, and to determine their cost: benefit impact.

The initial consumer research includes two types of surveys: a Consumer's Opinions of Food Service Systems Survey and Food Preference Survey. The latter establishes food preference patterns and determines the monthly frequency with which the consumers say they want the foods offered. This information then becomes the basis for an improved menu to increase food acceptance in the system. The Food Preference Survey data of the three Air Force bases are being analyzed in Meiselman, et al., 1973. The Consumer's Opinions Survey identifies factors which determine and/or influence customer utilization and acceptance of the food service facilities. A summary of the consumer opinions at each base will be published. These data will enable a comparative analysis to be performed determining variations in consumer opinion as a function of demographic characteristics, locations, missions, size, and so forth; thereby establishing the limits of application of the Travis AFB results to other Air Force installations.

The environmental analysis consists of examining the dining facility environment to define the necessary improvements for increasing consumer satisfaction with minimum change and cost.

After the completion of the initial surveys and analyses, proposed changes will be implemented, insofar as practicable, at Travis AFB for experimental evaluation. Limited analyses and evaluations, as necessary, will also be performed at both Minot AFB, North Dakota, and Homestead AFB, Florida, during the course of the system analysis project for the purpose of verifying the findings and conclusions and assessing their potential for application to the whole Air Force.

The final phase consists of recommending changes to the Air Force to improve performance, increase effectiveness, and reduce cost of base food service operations. An implementation plan will also be provided.

The present report, is one element of the total system analysis, the element which basically determines who the consumer population at Minot AFB is, and what these consumers perceive as main problem areas in the present food service system.

## METHOD

A copy of the Consumer's Opinions Survey is contained in Appendix I. The questionnaire was developed by the Pioneering Research Laboratory on the basis of previous responses to military food service systems and on the basis of results from informal interviews with Air Force consumers. This format permitted automated scoring by a mark sense reader.

The survey was administered at Minot AFB between 8-12 January 1973 to groups ranging in size from 23-185 respondents. The respondents were seated at tables in a large, attractive recreation room in the Base Recreation Center and were told the background of the study by one of the four supervisors present. Each respondent was first asked to complete the Consumers' Opinions Survey, which took about 40 minutes, and then a Food Preference Survey, which took about 60 minutes.

Because valid probability samples were not feasible (refer to Appendix III), each organizational unit (except the 91st CES and the 91st Comm. S., both of which were involved in special projects) was requested to send approximately 16% of its enlisted strength to one of the eight testing sessions, yielding a total requested sample size of approximately 775. Due to transfers, leaves, temporary duty, flights, and other factors, 562 surveys were actually administered. Fifty-three were discarded because the forms were incorrectly filled out (50 of these were from men who left many items blank because they had not used the Minot AFB dining facilities frequently enough to respond).

The 509 respondents are treated as two sample groups, one containing 245 subsistence-in-kind (SIK) personnel and the other including 264 personnel receiving a basic-allowance-for-subsistence (BAS). Any discrepancies from these numbers in a particular table reflect those respondents who left the specific item unanswered.

Appendix II contains Tables 41 to 50, which present detailed descriptive information on the demographic background characteristics of the consumer samples. The background profile of the "typical" SIK and BAS respondent was:

	SIK	BAS
Sex:	Male	Male
Race:	Caucasian	Caucasian
Age:	20.0 years	24.9 years
Educational Level:	High School Graduate	High School Graduate
Time in Service:	1 1/5 years	5 2/3 years
Reenlistment Plans:	Probably will not	Undecided to probably will not
Reaction to Military Service:	Neutral to disliking a little	Neutral
Pay Grade:	Between E-2 and E-3	Slightly above E-4
Urban/Rural Background:	From a small to moderate sized city	From a small to moderate sized city
Home State:	New York	New York

In general a member of the SIK sample was nearly 5 years younger than a member of the BAS sample, had been in the service 4 1/2 years less, was more negative toward reenlistment, had a less favorable attitude toward the military, had a lower pay grade, and was from a slightly larger community than his BAS counterpart. The samples represent a proportional cross-section of the population with the exception of a slight over-representation of North Dakota and the immediately adjacent states. Information obtained from both samples will be presented in this report, but because the primary concern should be for the SIK group, the results focus on the opinions of this group.

## RESULTS

**Meal Patterns.** Table 1 presents the meal patterns of the Minot AFB samples, which demonstrate again, as did the Travis AFB data (Branch and Meiselman, 1973), that the traditional assumption of 3 meals per day, 21 meals per week as the maximum attendance rate is not valid for the military. Table 1 indicates that approximately 25% of the SIK's stopped eating breakfast after joining the military, 10% no longer ate the mid-day meal, 15% stopped eating the evening meal, and between 10% and 15% no longer ate after-evening meals. Note that only slightly more than a third of the SIK's currently eat breakfast at all.

On the basis of current meal patterns and the percent obtaining meals from dining facilities, the greatest increase in attendance by the SIK's could be achieved at the evening meal, less at the noon meal, and a minimal increase at breakfast. Excluding private residences, the category of installation snack facilities (like the bowling alley and BX snack bars), and the category of diners, snack bars, pizza parlors (all located off the installation) are the major competitors for SIK patronage.

Table 2, 3, and 4 present the meal patterns of the samples in terms of the number of meals per individual rather than the percent eating the meal. In Table 2 note that while the mean number of meals reportedly consumed before entering the military by the SIK group was 20, the SIK's (remembering to December 1971, on the average) nevertheless exhibit the previously reported pattern (refer to Branch and Meiselman, 1973 for further data) of highly variable meal patterns. As many SIK's ate between two and three meals a day as ate four and only 1/4 ate the traditional three meals a day. The BAS group (remembering to April 1967, on the average) also exhibited a variable meal pattern.

Table 3 highlights the fact that 3-4 fewer meals are eaten after the man enters military service, with both sample groups demonstrating changed meal patterns (only 10% SIK and 14% BAS personnel currently consuming the 21 meals per week).

Table 4 shows that only a small percentage of SIK consumers are frequently patronizing the food service facilities.



Table 1

## Meal Patterns

## Meal Patterns Before Entering Military

		Mon	Tues	Wed	Thur	Fri	Sat	Sun
Breakfast:	SIK	62%	61%	62%	63%	62%	62%	62%
	BAS	67%	66%	67%	65%	66%	67%	66%
Mid-Day:	SIK	92%	91%	91%	92%	93%	91%	91%
	BAS	84%	87%	87%	87%	86%	87%	84%
Evening:	SIK	93%	93%	92%	91%	91%	88%	88%
	BAS	90%	91%	90%	92%	89%	90%	89%
After-Evening:	SIK	44%	44%	45%	44%	48%	54%	52%
	BAS	35%	33%	36%	35%	42%	46%	40%

## Current Meal Patterns

		Mon	Tues	Wed	Thur	Fri	Sat	Sun
Breakfast:	SIK	35%	33%	36%	36%	36%	29%	25%
	BAS	41%	41%	42%	41%	40%	45%	45%
Mid-Day:	SIK	82%	82%	82%	82%	80%	76%	79%
	BAS	73%	73%	73%	72%	71%	74%	73%
Evening:	SIK	79%	78%	78%	77%	76%	72%	74%
	BAS	83%	85%	85%	86%	85%	86%	85%
After-Evening:	SIK	31%	31%	31%	30%	36%	40%	36%
	BAS	29%	27%	29%	26%	35%	41%	38%

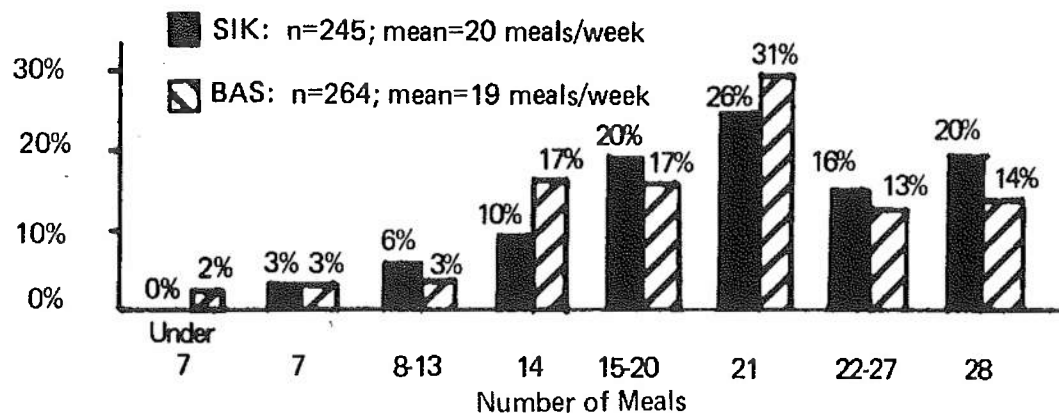
## Meals Obtained from Dining Facilities

		Mon	Tues	Wed	Thur	Fri	Sat	Sun
Breakfast:	SIK	27%	28%	31%	29%	31%	17%	15%
	BAS	12%	13%	12%	13%	13%	8%	8%
Mid-Day:	SIK	74%	74%	75%	72%	74%	58%	61%
	BAS	27%	26%	28%	25%	24%	18%	17%
Evening:	SIK	63%	62%	61%	63%	60%	53%	54%
	BAS	20%	21%	20%	19%	19%	15%	13%
After-Evening:	SIK	21%	20%	19%	21%	23%	26%	25%
	BAS	6%	6%	6%	7%	7%	7%	6%

Note: Numbers in the cells indicate the percent usually eating the meal.

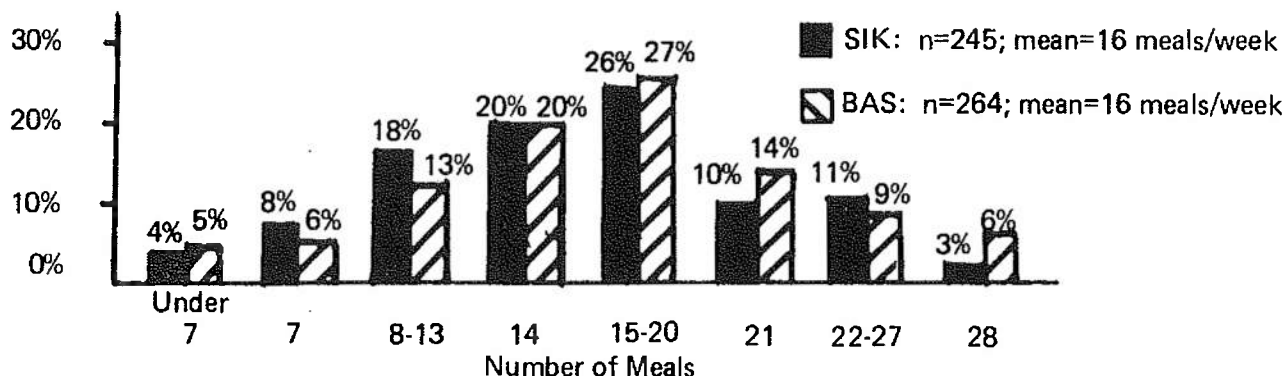
**Table 2**

**Number of Meals Per Week Consumed Before Entering Military**



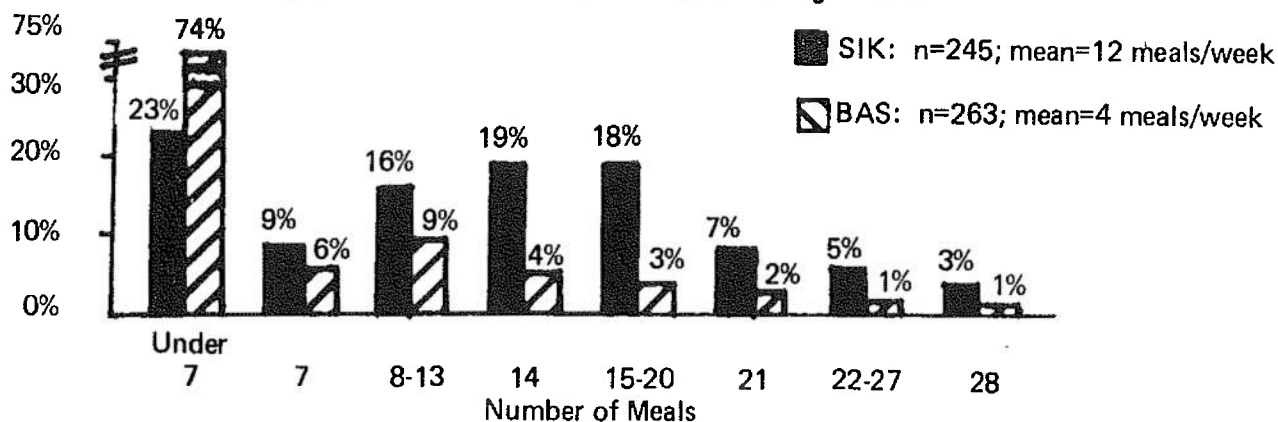
**Table 3**

**Number of Meals Per Week Consumed Currently**



**Table 4**

**Number of Meals Per Week Consumed in Dining Facilities**



NOTE: The category of "Under 7 meals per week" includes 9% of SIK's and 56% of BAS's who indicated 0 meals per week.

**Preferred Foods.** Table 5 indicates that over half of both samples were raised on general American style cuisine and about a fourth on Soul and Southern combined. It is also revealed that, for both samples, the three most preferred types of specialty foods (excluding general American) are Italian, Seafood, and Mexican, the same results obtained from the Army in 1971 (Kiess, *et al.*, 1972) and from the Air Force at Travis AFB (Branch and Meiselman, 1973). More detailed food preference information will be forthcoming in a report by Meiselman, *et al.*, 1973.

**Evaluation and Importance of Fourteen Food Service Factors.** Table 6 presents information concerning the factors influencing the non-utilization of Minot AFB dining facilities. The 14 factors are listed in decreasing magnitude according to the mean scores of the SIK sample.

Note that food related problems (quality, variety, and quantity in that order) are more significant<sup>1</sup> factors in the non-utilization of the dining facilities by Minot AFB consumers than are facilities or management problems. The speed of service and the monotony of the same facility are nevertheless important factors in non-utilization, followed by the service of the personnel, the general environment, the degree of military atmosphere, and hours of operation, whereas expense contributes only minimally to non-utilization.

It was expected that the inconvenience of the locations of the dining facilities would be a more important factor in non-utilization. Also the speed of service at Minot AFB represents a curious phenomenon. The importance of speed of service was paramount to the Army consumer (Kiess, *et al.*, 1972), but was surprisingly not related to attendance for the Travis AFB consumer. Now it appears again to be of considerable importance to the Minot consumer. Apparently from the consumer point of view the Travis AFB system has employed a good method of handling this potential problem area.

<sup>1</sup>A note concerning statistical significance in the context of this report is given in Appendix III.

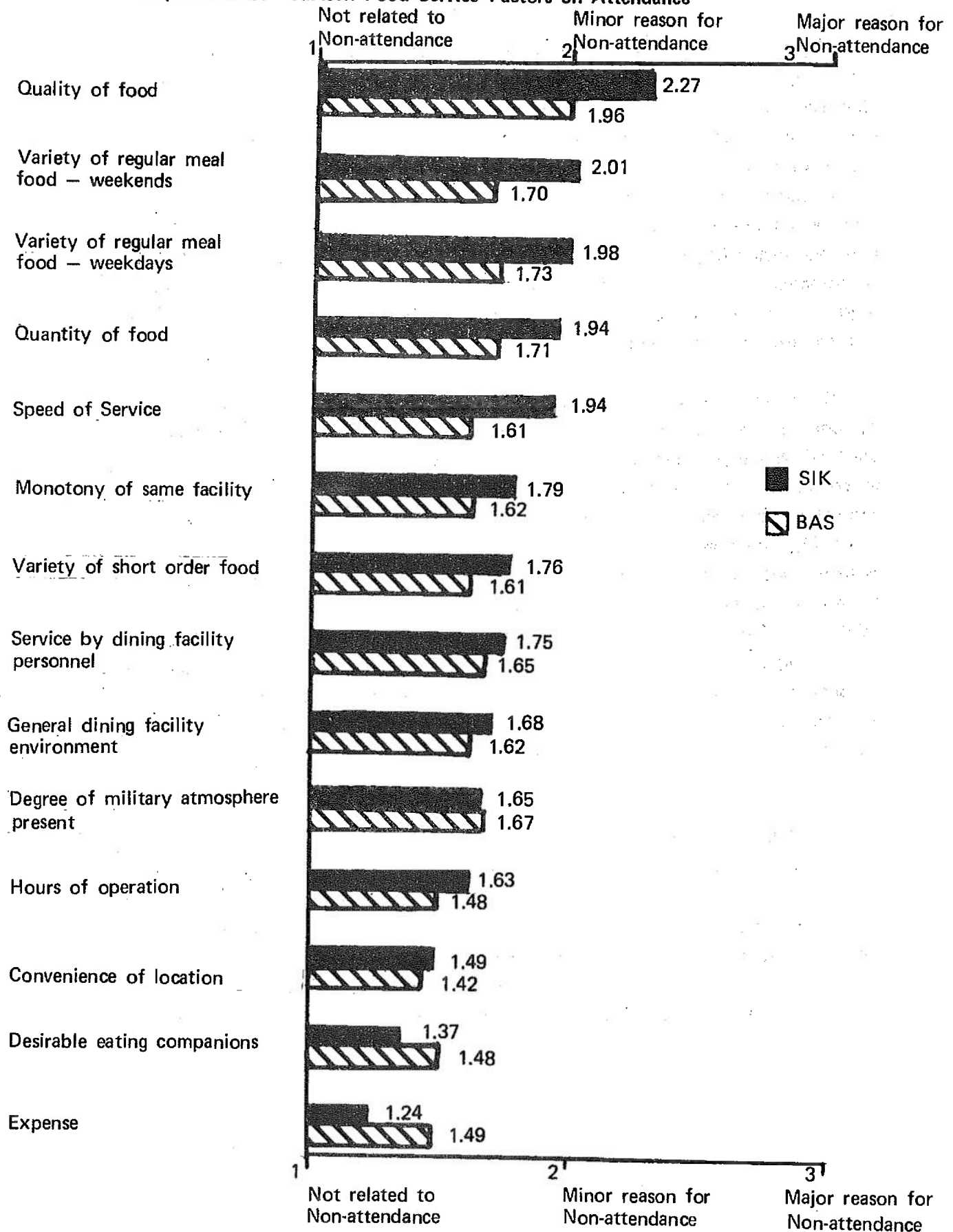
**Table 5**  
**Preferred Foods**

Type of Cooking Individuals were raised on			Desired Type of Cooking or Specialty Food	
SIK	BAS	Cuisine	SIK	BAS
54%	51%	General American	21%	20%
16%	13%	Soul	7%	7%
7%	13%	Southern	6%	8%
6%	6%	English	4%	5%
4%	4%	German	5%	5%
3%	1%	Italian	13%	13%
2%	2%	Mexican	10%	12%
2%	2%	New England	2%	2%
1%	3%	Polish (& Eastern Europe)	2%	2%
1%	1%	Spanish (not Mexican)	2%	2%
½%*	1%	French	3%	2%
½%*	½%*	Jewish	1%	½%*
½%*	0%	Greek	½%*	½%*
0%	½%	Chinese	8%	3%
0%	0%	Japanese	1%	3%
a	a	Seafood	13%	11%
2%	2%	Other	2%	1%

\*: Less than ½%

a: Not listed as a response alternative

**Table 6**  
**Importance of Fourteen Food Service Factors on Attendance**





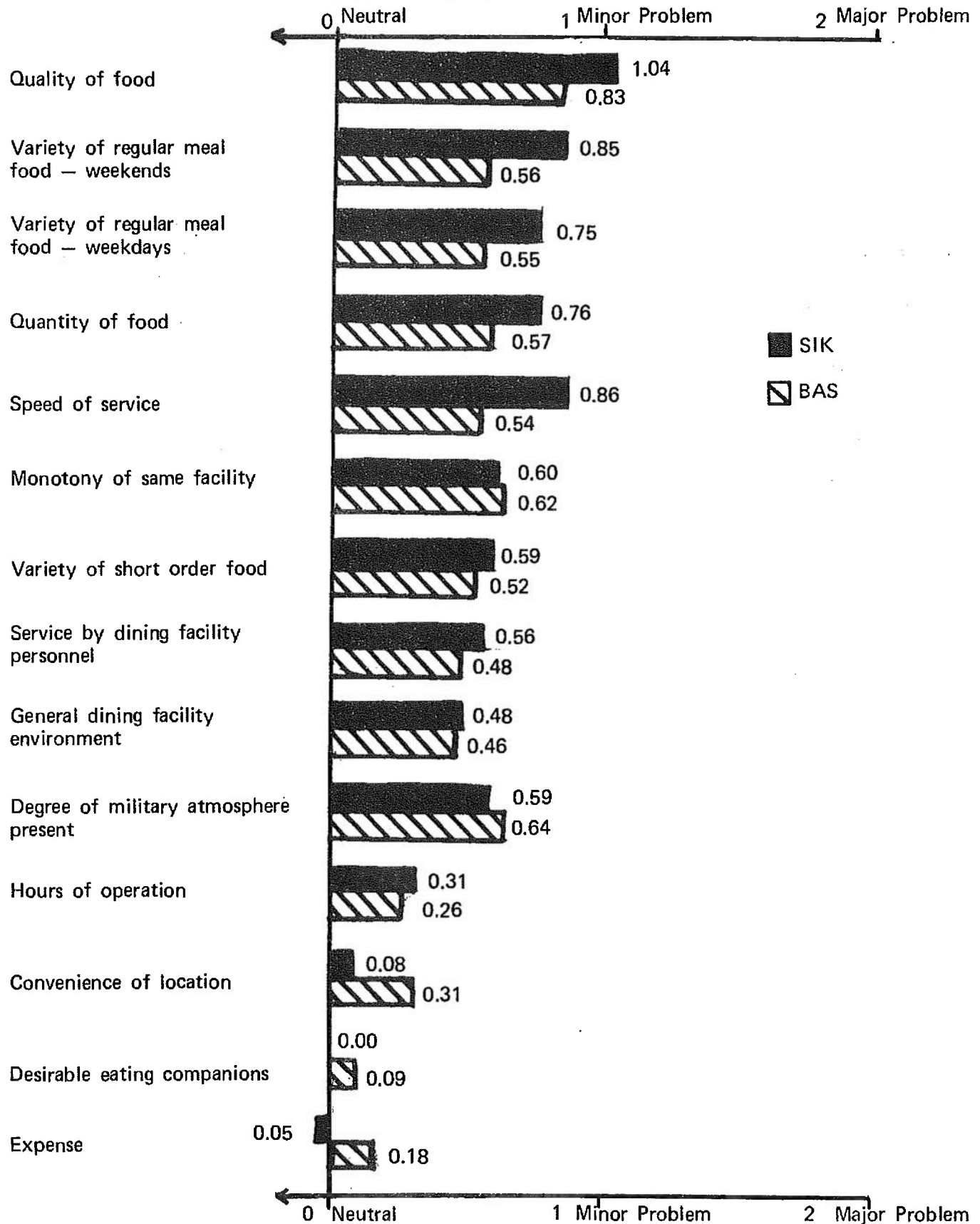
The consumers were also asked to rate each of the foregoing 14 factors as a major attraction, a minor attraction, neutral, a minor problem, or a major problem. This alternative format was used because querying the consumers about the degree to which each of the factors influences non-attendance does not allow the consumer to compliment the food service system. Furthermore, some of the factors might be viewed as "problems" of the food service system but not serious enough to influence utilization. Table 7 presents these evaluations with the 14 factors listed in the same order as in Table 6. Note that only one factor (expense) had a mean rating above the neutral point (i.e., was rated as an attraction), and this only for the SIK's; the rest were viewed as problems of varying degrees. Food related factors again occupied the lead positions. Speed of service, however, was the second most important problem factor.

Conceivably the above and much of the following information might be dismissed by some on the assumption that only those who dislike military service complain about the food, and if food service were improved they would find something else about which to complain. This assumption was specifically addressed (Table 8) by examining the correlations between how much the individual dislikes or likes military service (see Table 47), and how much of a problem or attraction he views each of the 14 factors as being; and the correlations between reenlistment plans (see Table 46) and responses to each of the 14 factors. Notice that most correlations are between 0.1 and 0.2 (range: -0.04 to 0.29), which means that, overall, approximately 1-4% of the reasons for complaining about food service can be attributed to the man's general attitudes toward the service — not a sizeable amount. The individual's concern with military atmosphere was the factor most related to his attitudes toward the service ( $r = 0.21$  to  $0.29$ ), but even here, this attitude only accounted for approximately 9% of his concern at a maximum.

The following discussion will expand on the consumers' opinions for each of the 14 factors and will detail which aspects of each factor are pleasing or displeasing.

**Part I: Quality of Food.** Table 9 presents the consumers' image of the raw food products procured for dining hall consumption. Note first, that as in Tables 6 and 7, the mean scores of the SIK sample are usually more critical than the BAS's; this pattern continues for nearly every factor covered in the rest of the report. The consumers'

**Table 7**  
**Current Evaluation of Fourteen Food Service Factors**



NOTE: The scale had equal units to the left or positive or neutral; it is truncated here.

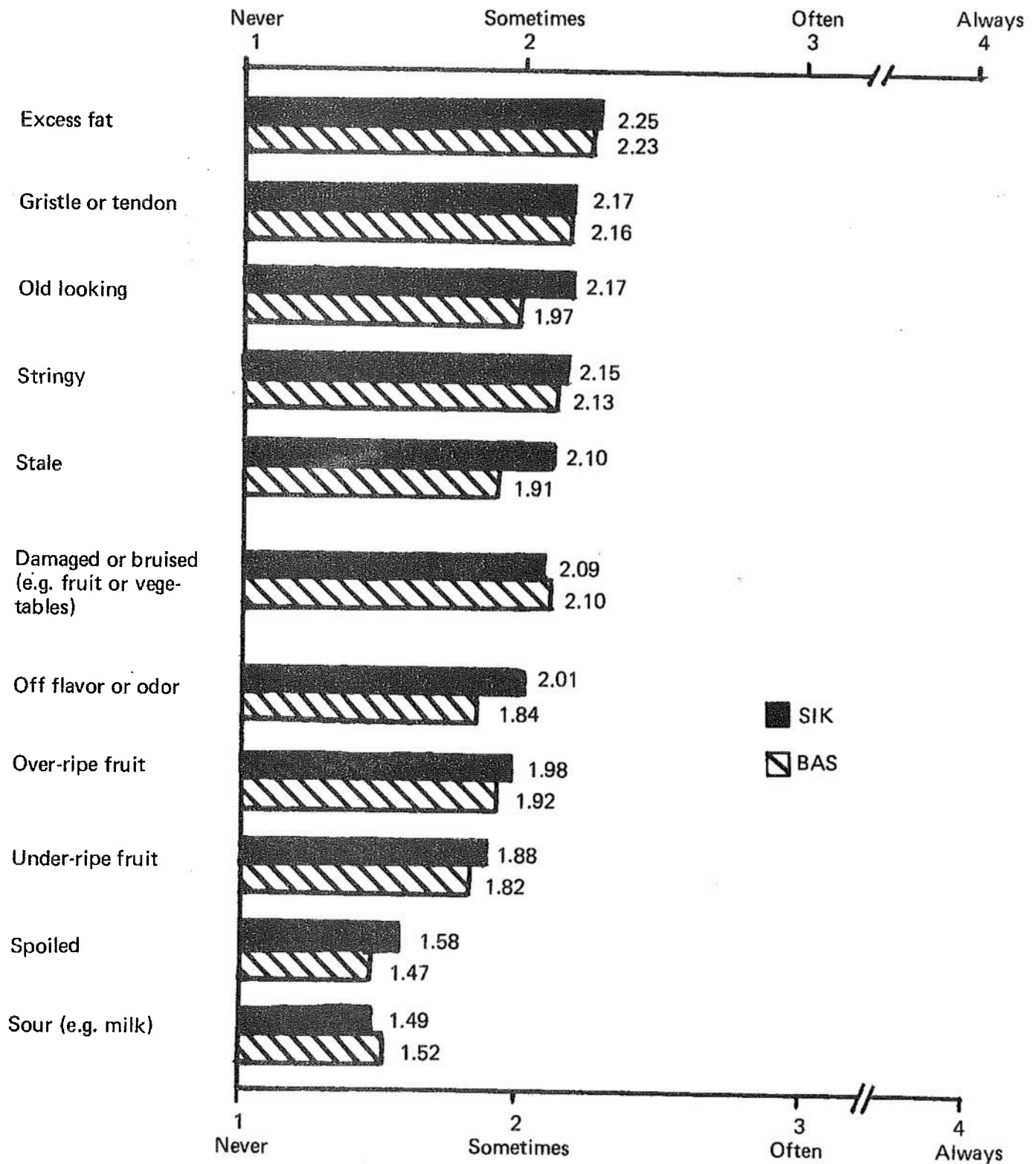
Table 8

Correlation Between Attitudes toward Air Force  
and the Fourteen Food Service Factors

	SIK		BAS	
	Dislike/Like of Air Force	Desire to Reenlist	Dislike/Like of Air Force	Desire to Reenlist
Concern with Quality of Food	0.20	0.20	0.17	0.18
Concern with Variety of Regular Meal Food-Weekends	0.16	0.21	0.14	0.16
Concern with Variety of Regular Meal Food-Weekdays	0.17	0.21	0.23	0.21
Concern with Quantity of Food	0.17	0.11	0.14	0.15
Concern with Speed of Service	0.08	0.11	0.14	0.14
Concern with Monotony of Same Facility	0.13	0.14	0.20	0.10
Concern with Variety of Short Order Food	0.18	0.17	0.12	0.06
Concern with Service by Dining Facility Personnel	0.18	0.19	0.15	0.15
Concern with General Dining Facility Environment	0.24	0.16	0.16	0.12
Concern with Degree of Military Atmosphere Present	0.29	0.21	0.29	0.26
Concern with Hours of Operation	0.20	0.24	0.14	0.04
Concern with Convenience of Location	0.03	0.03	0.06	0.07
Concern with Desirable Eating Companions	0.12	0.06	0.06	0.06
Concern with Expense	0.02	-0.04	0.12	0.16

Table 9

## Quality of Raw Food Product



perceptions of the quality of the foods are generally not too unfavorable (i.e., sometimes over-ripe fruits, sometimes under-ripe; but not often or always). The non-meat items are generally considered favorably, although they are sometimes perceived as stringy, stale, or old looking. Raw meat products are viewed as sometime-to-often having excess fat and more-than-sometimes having gristle or tendon.

Table 10 presents the consumers' image of the quality of the food preparation. Underseasoning seems to be a greater problem than overseasoning. Greasy, cold, tough, dried out, undercooked, overcooked, and burned food is found sometimes-to-often. This confirmed Kiess, *et al.*, 1971 who also found fatty, greasy food to be the biggest problem in Army food.

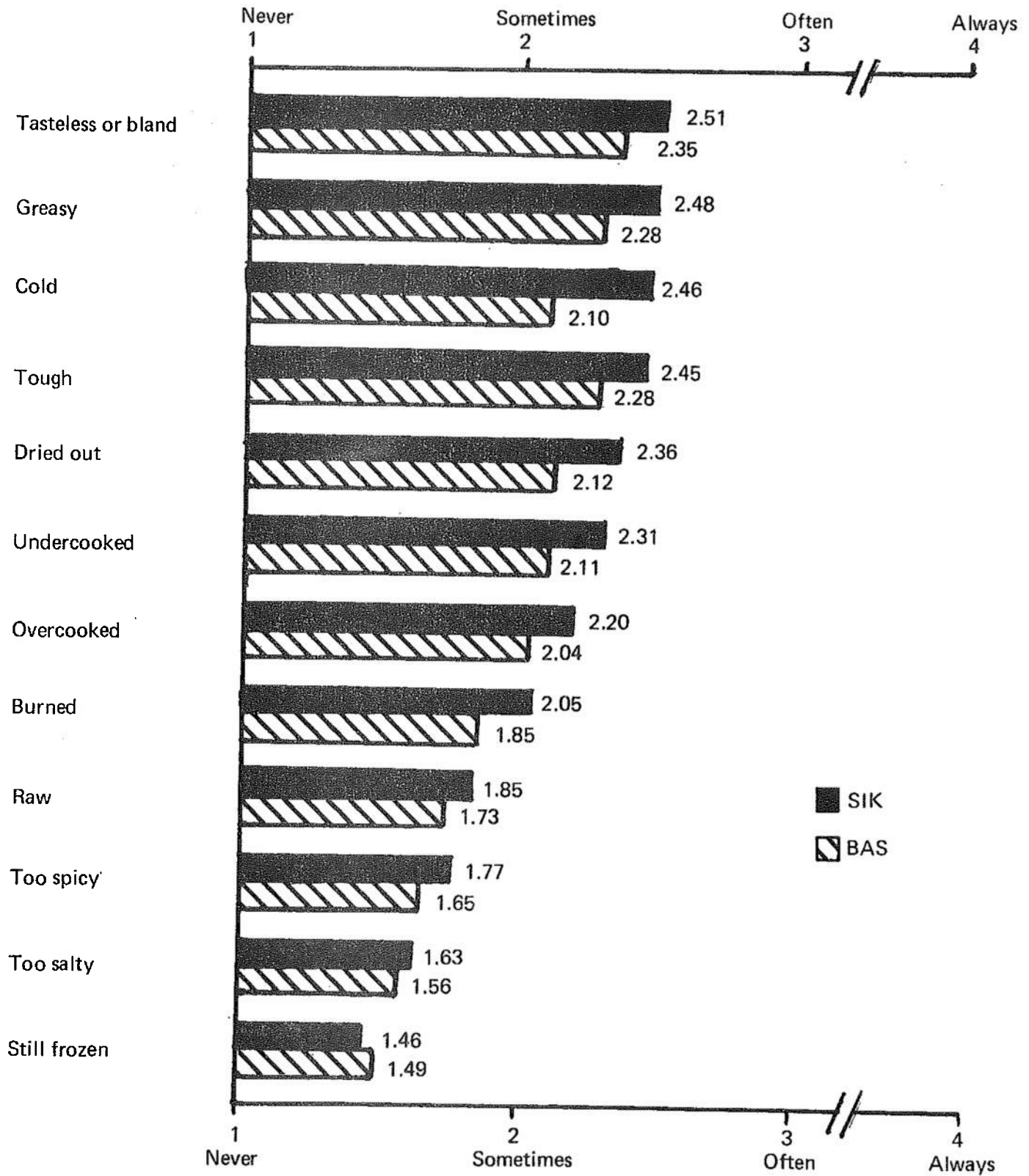
**Part II: Variety of Weekend Food.** The weekend variety data (Table 11) shows that the consumers were most concerned with meat offerings, desiring at least a few more offerings on weekends. As a matter of fact, consideration of this and subsequent tables would lead one to believe that the current military food service systems are evaluated by the consumers primarily on the basis of meat items. Note, however that none of the food types even approached the "choices now enough" or the "fewer choices acceptable" categories, indicating that more variety across the board is desired. The SIK and BAS samples have very similar opinions concerning weekend variety (with the BAS sample following the previously noted trend of being less critical).

**Part III: Variety of Weekday Food.** Table 12 exhibits a remarkably similar pattern for weekday food as for weekend food. This similarity would seem to indicate that variety of weekend food does not decrease as is sometimes the case in military food service systems. This information, coupled with the attendance information in Table 1, suggests that the typical lower weekend attendance is not so much a function of variety as other factors.

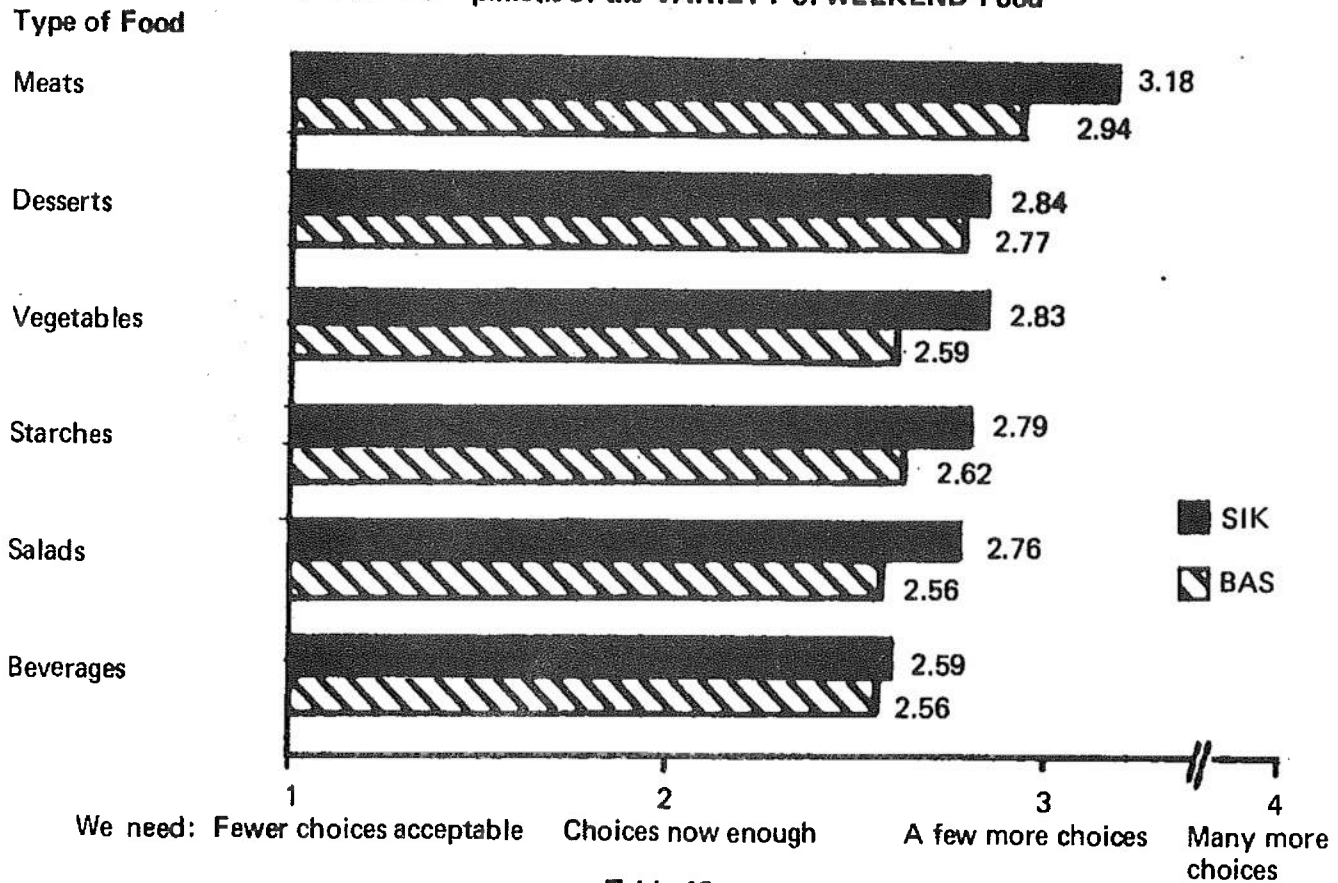
Table 13 presents the consumers' opinions of the variety over an extended period, not just the variety for a particular meal. From the similarity in mean values, it is evident that the variety over a cycle was as serious a problem as the variety of a particular meal. The same pattern across food types existed as shown in Tables 11 and 12: meats first; then desserts, vegetables, and starches closely grouped; then salads; and finally beverages.



Table 10  
Quality of Food Preparation



**Table 11**  
**Consumers' Opinions of the VARIETY of WEEKEND Food**



**Table 12**  
**Consumers' Opinions of the VARIETY of WEEKDAY Food**

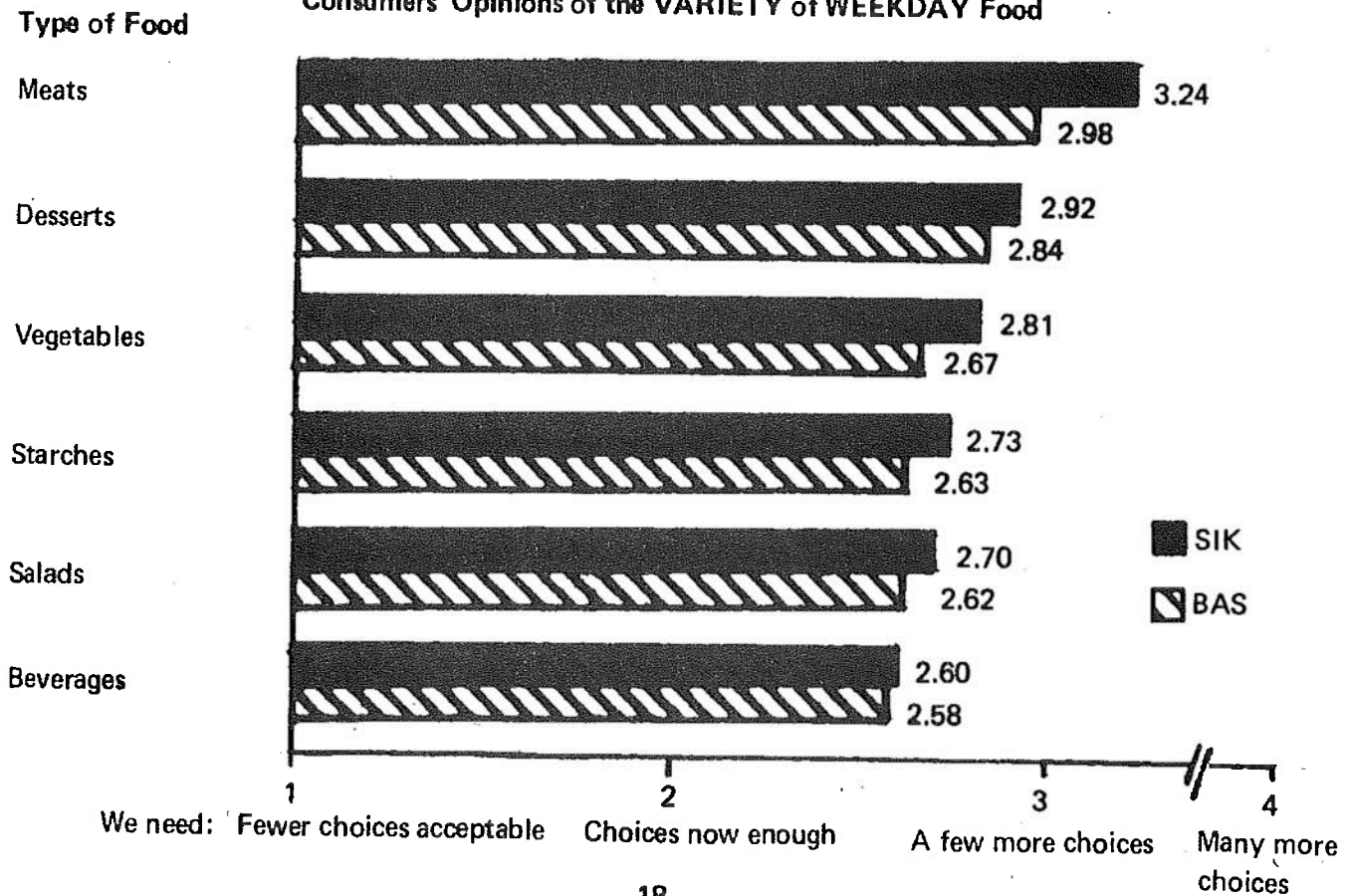
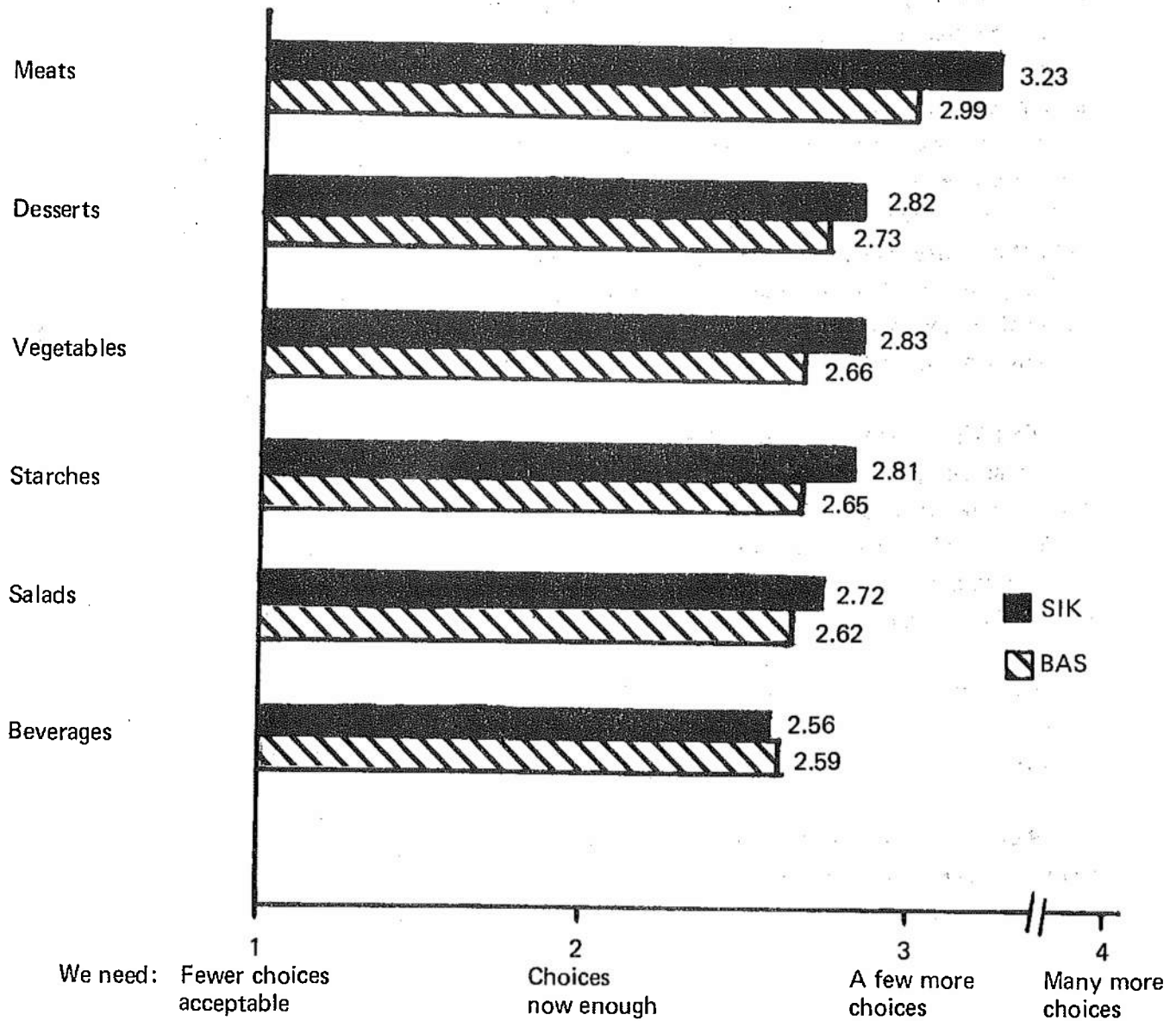


Table 13

Consumers' Opinions of the VARIETY of food over a Period of a MONTH

Type of Food



**Part IV: Quantity of Food.** Table 14 indicates that approximately two thirds of the customers at least sometimes leave the dining facilities without enough to eat. Table 15 provides more specific information on portion sizes of the menu components. For both sample groups, the ranking of portion size from too little to more than about right was meats, desserts, vegetables, and starches. Both groups clearly desire an increase in the amount of meat per serving. Table 16 supplements this information by identifying which menu items were available for second helpings. The problem of portion size did not usually influence the food classes which the consumers served themselves (salads, beverages, and desserts) unless runouts occurred. Of the foods which were served by others, however, note that meats were least often available for second helpings. This is consistent with its being cited by the consumers, as mentioned above, for insufficient quantity per serving. Complaints were also made about the unavailability of short order items for seconds. The portion size and availability of the food classes other than these two were deemed sufficient.

**Part V: Speed of Service.** Table 17 indicates that over half the consumers perceived the usual delay at the headcount station to be in excess of five minutes. Table 18 demonstrates that, on the average, an additional five minute delay was perceived in the serving line with at least 1/4 of each sample perceiving a delay of five minutes or more. This would seem to explain why the existing speed of service contributed to non-utilization of the dining facilities.

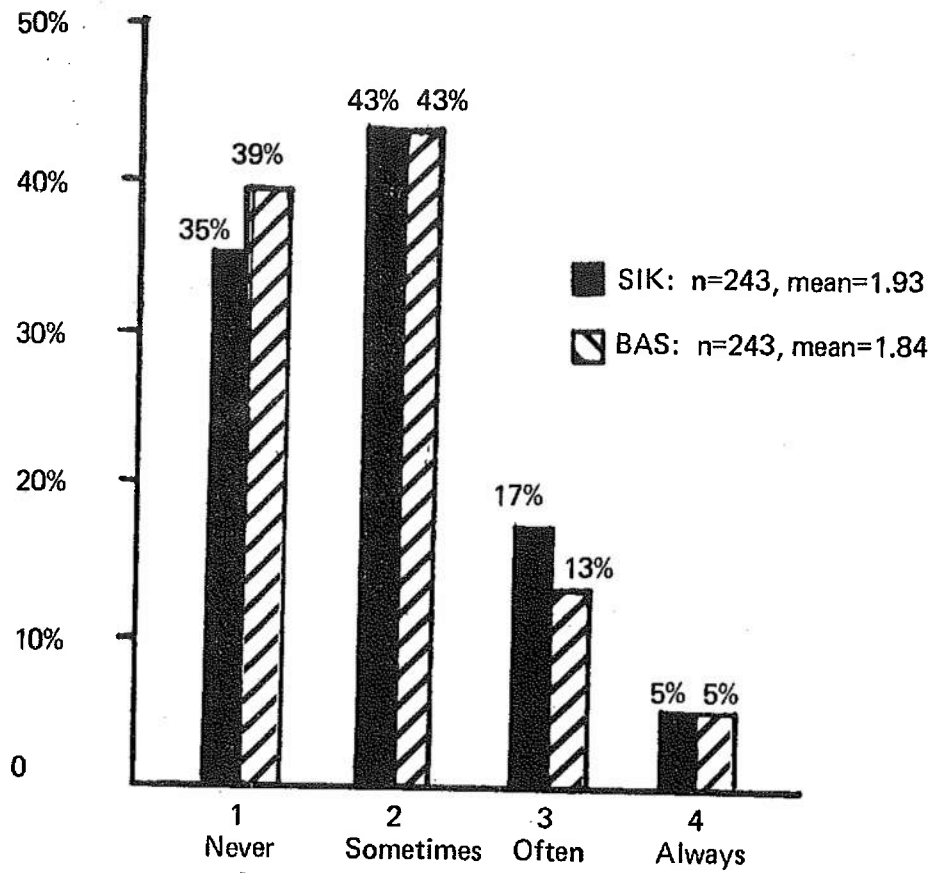
**Part VI: Monotony of the Same Facility.** Although this factor does influence attendance to a considerable degree, no further information was asked of the respondents because this would have required too great an addition to the survey length.

**Part VII: Variety of Short Order Food.** As indicated in Table 19, the consumers were in general agreement that at least a few more choices would be desirable for the short order service on the weekends, during the week, and over the period of a menu cycle.

**Part VIII: Service by Dining Facility Personnel.** Table 20 shows that the consumers rated the ability of the cooks lower than the attitudes of the workers. In general, these characteristics were viewed as somewhat poor by the SIK's and below average by the

Table 14

Consumers' Responses to the Question: Other than times of dieting, do you ever leave your dining facility without enough to eat?



**Table 15**

**Consumers' Opinions of Amounts per Servings**

Too Little

1

2

3

4

5

6

7

About Right

Too Much

SIK's

BAS's

Meats: 2.35

Meats: 2.52

Desserts: 3.53

Desserts: 3.45

Vegetables: 3.61

Vegetables: 3.73

Starches: 4.07

Starches: 4.21

**Table 16**

**Are Second Helpings Permitted?**

**SERVED BY OTHERS**

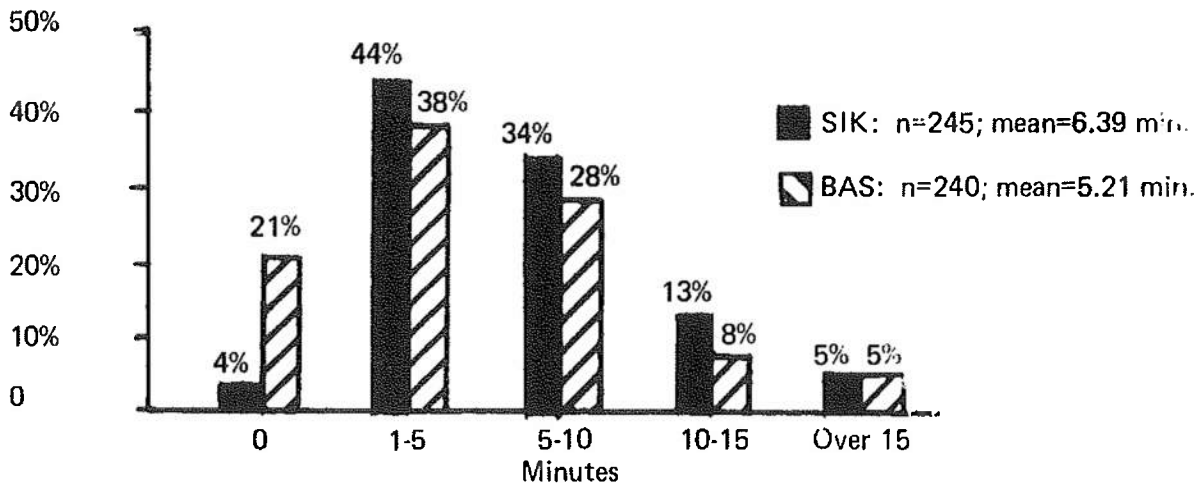
	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Short order items	6%	11%	46%	55%	48%	34%
Meat items	11%	21%	61%	60%	27%	19%
Starches	2%	9%	33%	44%	64%	46%
Vegetables	3%	10%	28%	42%	69%	48%

**SELF-SERVICE**

	Never		Sometimes		Always	
	SIK	BAS	SIK	BAS	SIK	BAS
Salads	2%	8%	13%	23%	85%	69%
Beverages	2%	7%	10%	20%	88%	73%
Desserts	3%	11%	15%	30%	82%	58%

**Table 17**

**Usual Delay at Headcount Station**



**Table 18**

**Usual Delay in Serving Line**

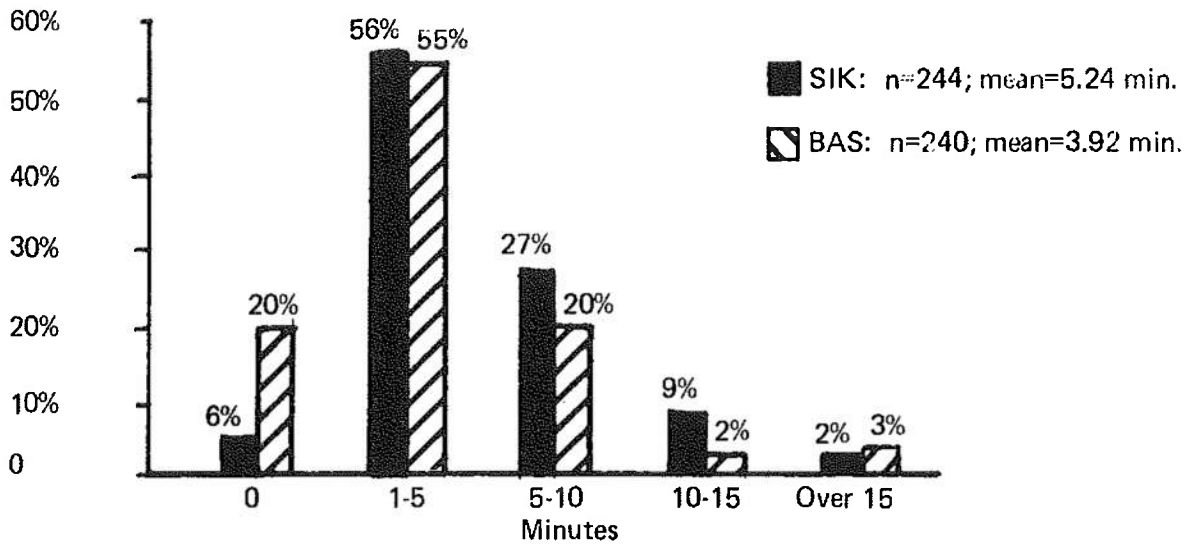
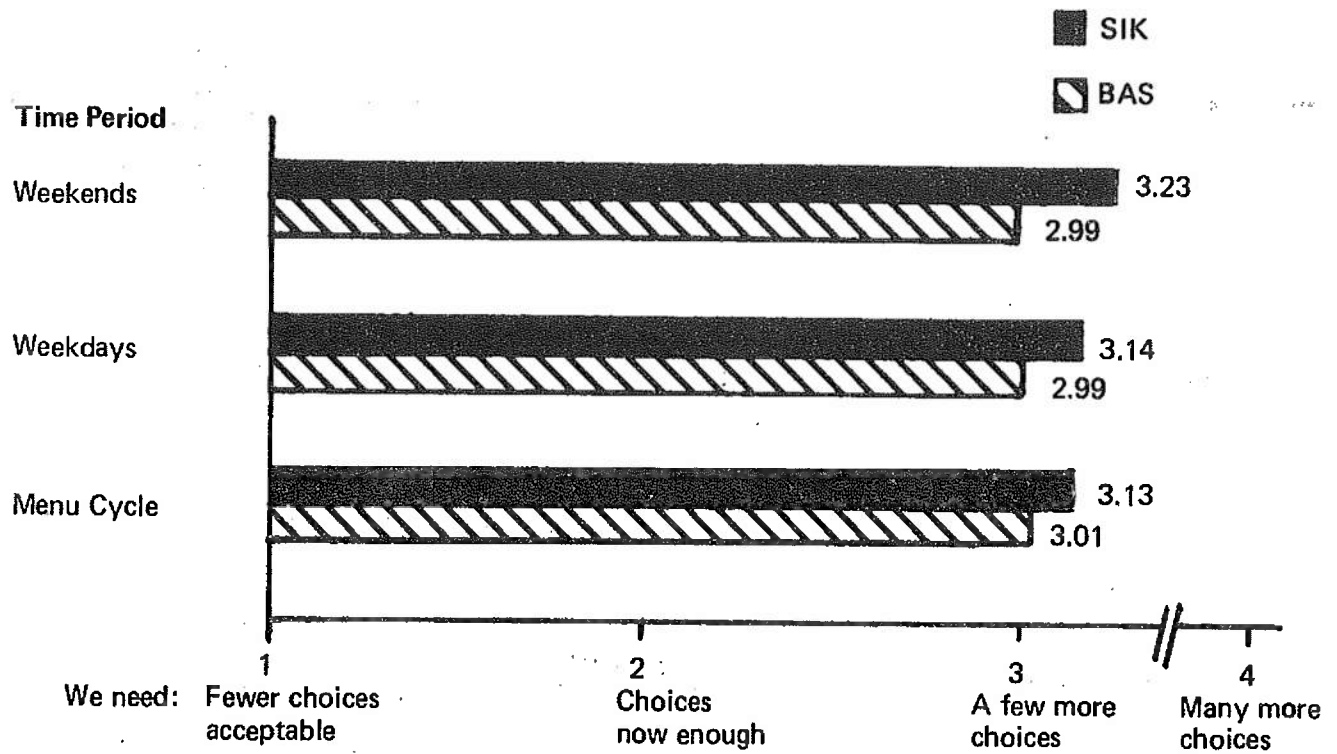




Table 19

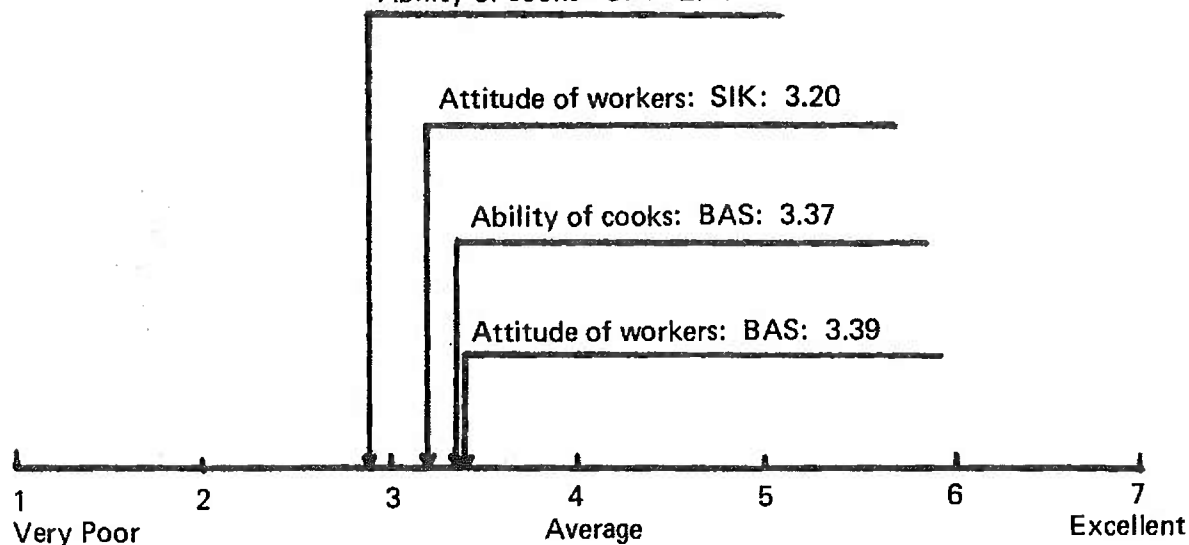
Consumers' Opinions of the VARIETY of SHORT ORDER FOODS



**Table 20**

**Dining Facility Personnel**

Ability of cooks: SIK: 2.91



**Table 21**

**Food Service Personnel Functions**

How often do you find:	1		2		3		4		MEAN	
	Never		Sometimes		Often		Always			
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Not enough condiments (ketchup, etc.)	30%	26%	41%	53%	22%	16%	7%	5%	2.07	2.00
Inappropriate or missing silverware	24%	23%	47%	54%	23%	19%	7%	4%	2.12	2.03
Serving line has run out of items	11%	15%	44%	49%	33%	29%	12%	8%	2.46	2.30
Left-overs being served day after day	13%	28%	37%	47%	32%	17%	18%	8%	2.56	2.06

BAS's. Table 21 indicates how often the consumers reported being exposed to inferior personnel practices (i.e., not putting out enough silverware or condiments; ordering too little food; ordering too much food and, hence, serving leftovers). The function of ordering correct quantities was apparently a more serious problem than the others. This data also indicated that runouts were a problem with a frequency of sometimes-to-often, a factor which probably contributed to the problem of insufficient quantities presented in Part IV.

In addition to these problems, the consumers were also asked how they would feel about bussing their own trays to the dishwashing area. As Table 22 indicates, institution of this procedure at Minot would not be well-received.

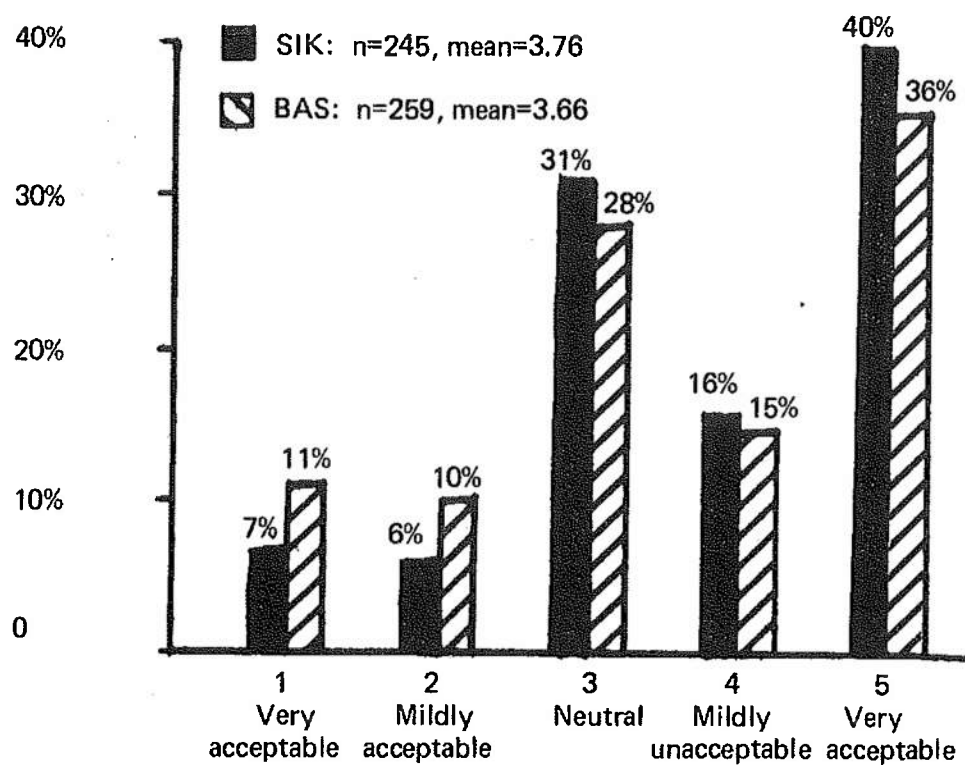
**Part IX: General Dining Facility Environment.** This section will be considerably more detailed than the preceding and following sections of this report because the concept of "environment" has so many dimensions. The tables in this section report data for the main Minot AFB dining facility only.

Table 23 presents the consumer evaluations of various facility-personnel factors (e.g. do personnel keep the serving counters clean or dirty). Although the survey questionnaires required the consumers to respond on a scale marked 1 to 5 with the items balanced (the positive descriptor on the left half the time and on the right half the time), for simplicity and order the tables in this report always are shown with the positive dimension on the right and the scale marked from -2 to +2, as indicated by the schemata. Thus, for example, a value of -0.40 would indicate that the mean score for the specific sample was nearly half way between neutral and moderately negative. In Table 23 notice that the silverware was rated in the direction of dirty, but in general everything else was rated more clean than dirty. This information should be integrated with the data pertaining to the service provided by the dining facility personnel.

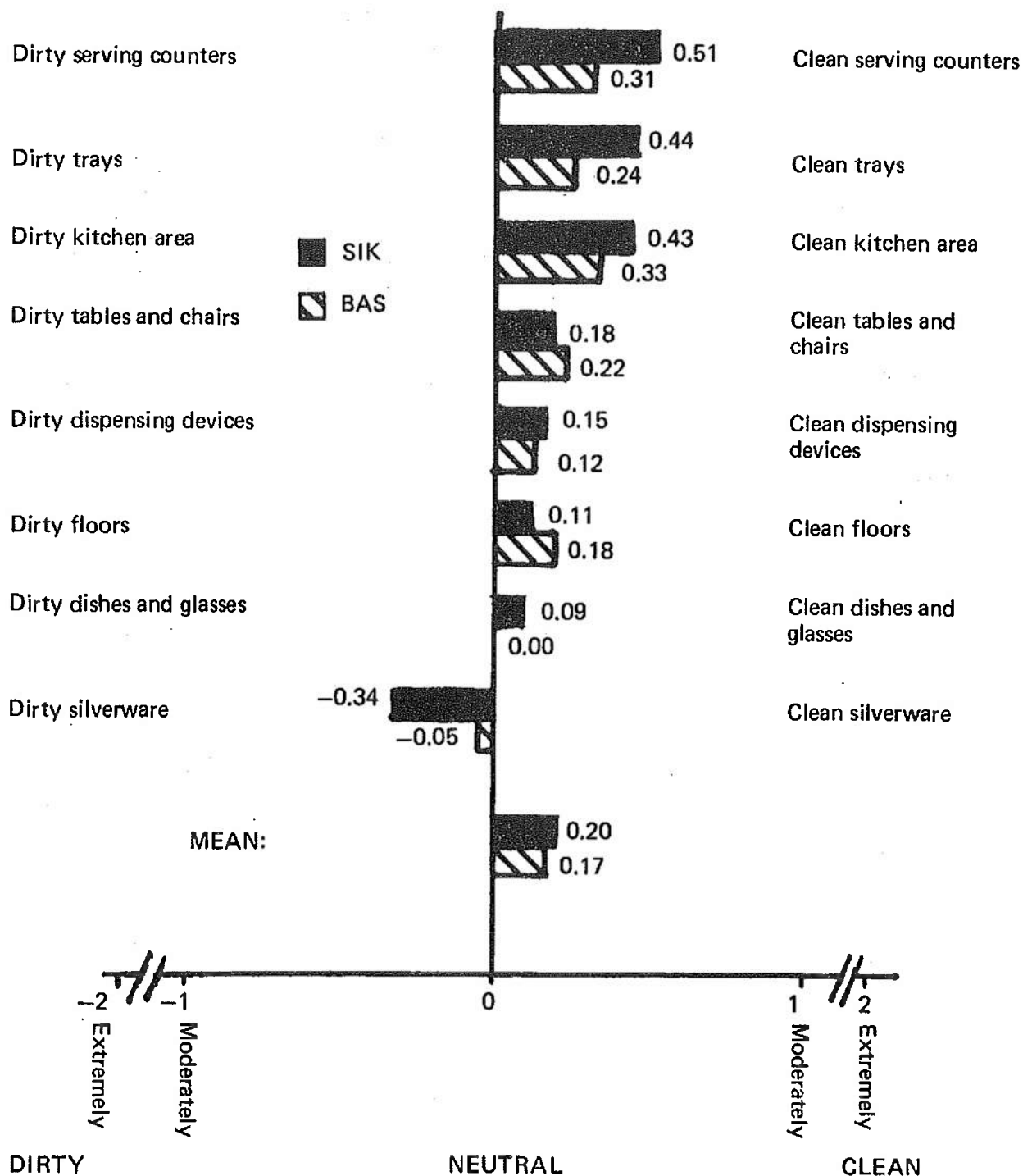
Table 24 presents the consumer view of the general condition of the dining facility. Insects and rodents were not reported as a problem, and the lighting was good. The consumers were not critical of safety hazards. The view, design, and appearance, however, were slightly negative features. Crowding and noise were also problems, and would reasonably be aggravated by any increase in utilization.

Table 22

Opinions Concerning Self Bussing



**Table 23**  
**Facility-Personnel Factors**



**NOTE:** There are 121 SIK's and 210 BAS's maximum responding per cell for this and the following tables in this format. The number of cases for any specific cell might be diminished by the small percentage who inadvertently left the item blank.

Table 24

General Condition of Dining Facility

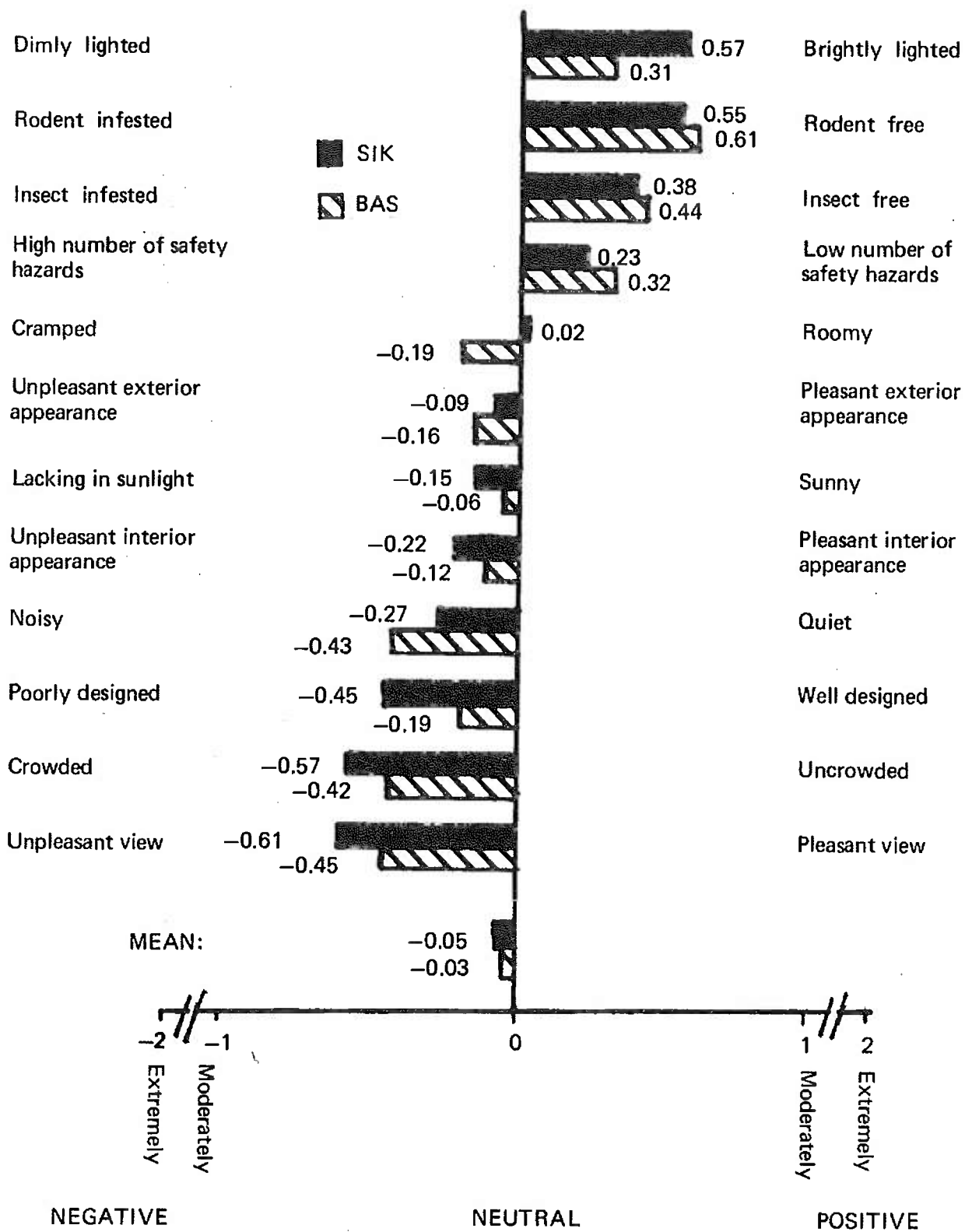


Table 25 presents the consumer view of the convenience features of the dining facility, indicating that the main facility was generally convenient to enter and leave, but too far from washroom facilities.

Table 26 demonstrates a trend toward a negative opinion of the appearance and atmosphere of the dining facility. The renovations programmed for Minot AFB prior to the analysis of this data should impact on the problems.

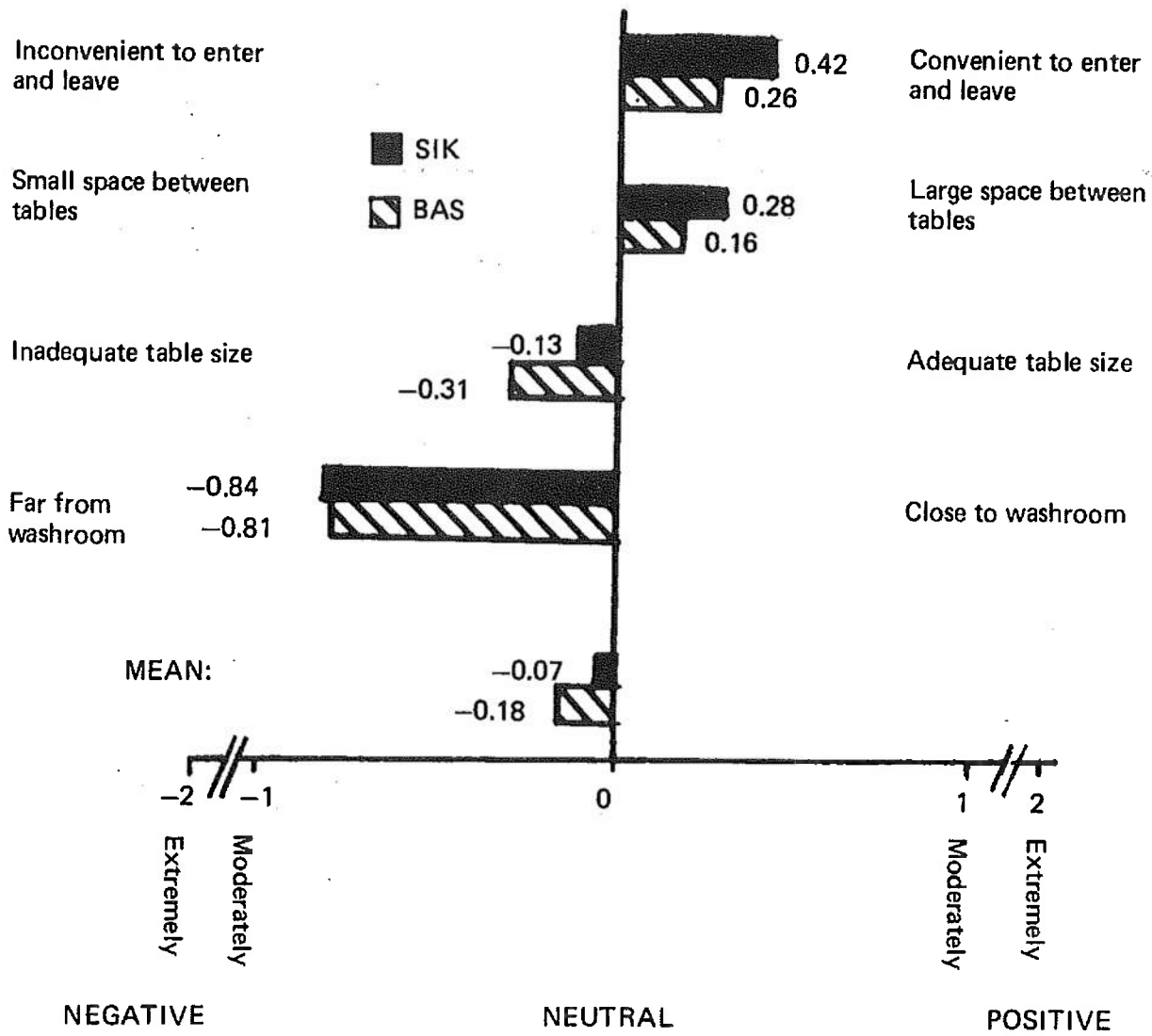
Table 27 provides information about the environmental/engineering factors of the facility, demonstrating that the consumers perceived the dining facility, on the average, as sometimes too cold (bear in mind, however, that the survey was administered in January), sometimes full of unpleasant food odors, and sometimes too stuffy.

Opinions concerning the tables in the facility are presented in Table 28. The consumers pointed out the limited variety available; and their ugly, cramped, and drab features. However, the tables were perceived as being sturdy. Table 29 demonstrates that four man square or rectangular tables are not the problem per se, as over 2/3 of these Air Force consumers chose this alternative. In all likelihood a variety of table sizes and shapes would best please these customers.

The consumers preferences for music in the dining facilities present an interesting phenomenon. On a 5-point scale (1=very acceptable, 5=very unacceptable), those currently without music desire it more than those with music (without: SIK mean was 1.5, BAS mean was 1.6; with music: SIK mean was 2.0, BAS mean was 1.8). The interpretation of this phenomenon, however, is that the consumers' image of a feature may not be realized by the actual product. If in fact the actual music system in use in some of the facilities does not meet the consumers' expectations, it might be that the type of music available does not coincide with their preferences. Table 30 provides a listing of these preferences. Apparently a variety of hard rock, popular, and soul might meet the preferences of the greatest percentage of the group.

**Part X: Military Atmosphere.** Table 31 clearly demonstrates that two out of three members of both the SIK group and the BAS group would prefer a little to a lot less military atmosphere in their dining facility. Table 32 supplements this information by indicating which rules they want enforced or instituted, and which they do not. In contrast

**Table 25**  
**Conveniences Within Dining Facility**





**Table 26**  
**Appearance and Atmosphere of Dining Facility**

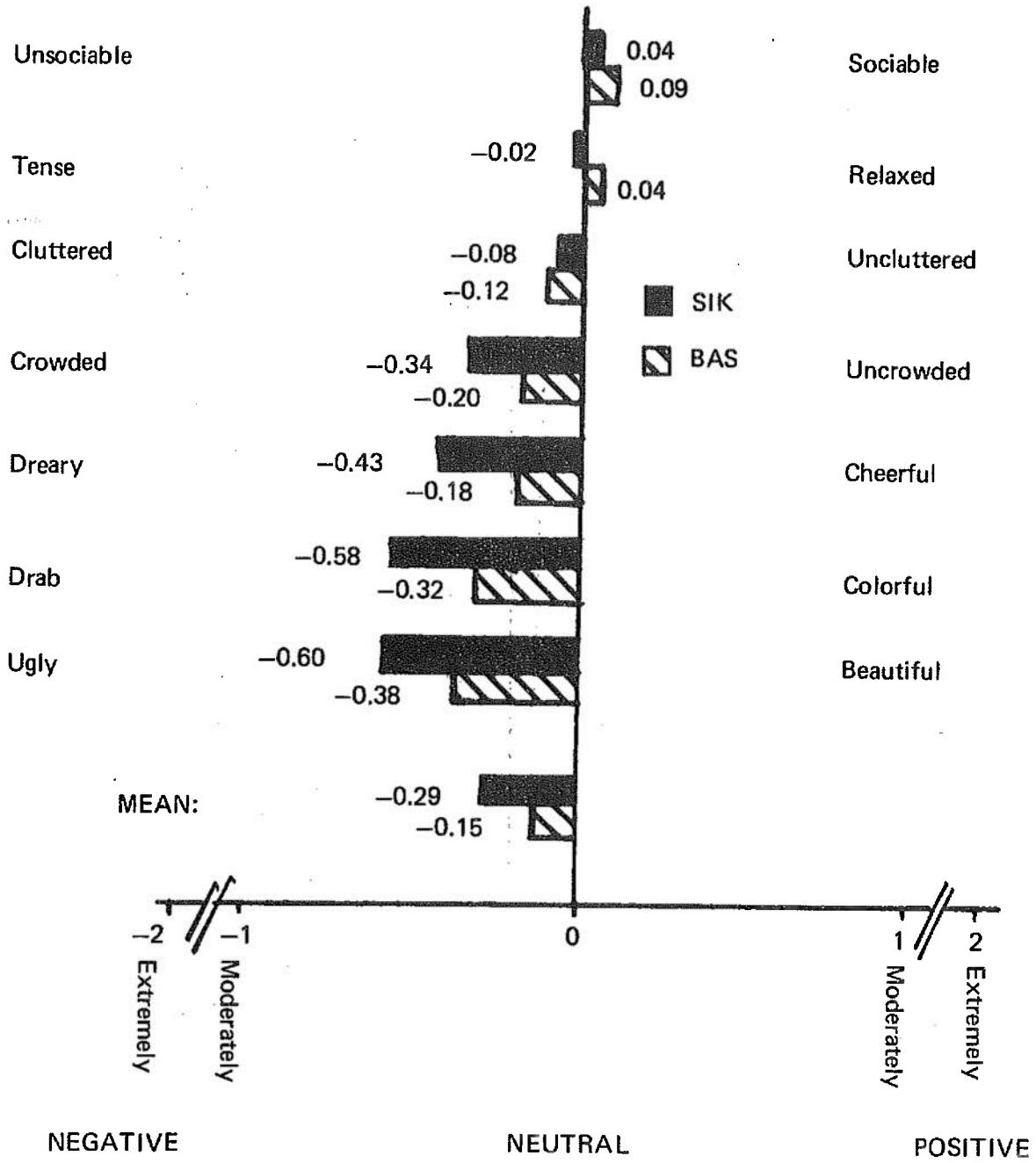


Table 27

Environmental/Engineering Factors

	1 Never		2 Sometimes		3 Often		4 Always		MEAN	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Is your dining facility ever:										
Too cold	22%	23%	59%	54%	16%	18%	4%	4%	2.02	2.03
Full of unpleasant food odors	45%	39%	36%	51%	11%	6%	8%	4%	1.82	1.76
Stuffy	46%	35%	42%	57%	8%	6%	4%	2%	1.71	1.74
Smoky	65%	59%	28%	36%	4%	4%	3%	1%	1.46	1.47
Too warm	59%	42%	38%	54%	3%	3%	½%	1%	1.45	1.62
Full of steam	82%	71%	15%	27%	2%	2%	1%	1%	1.21	1.33

Table 28

Tables in the Dining Facility

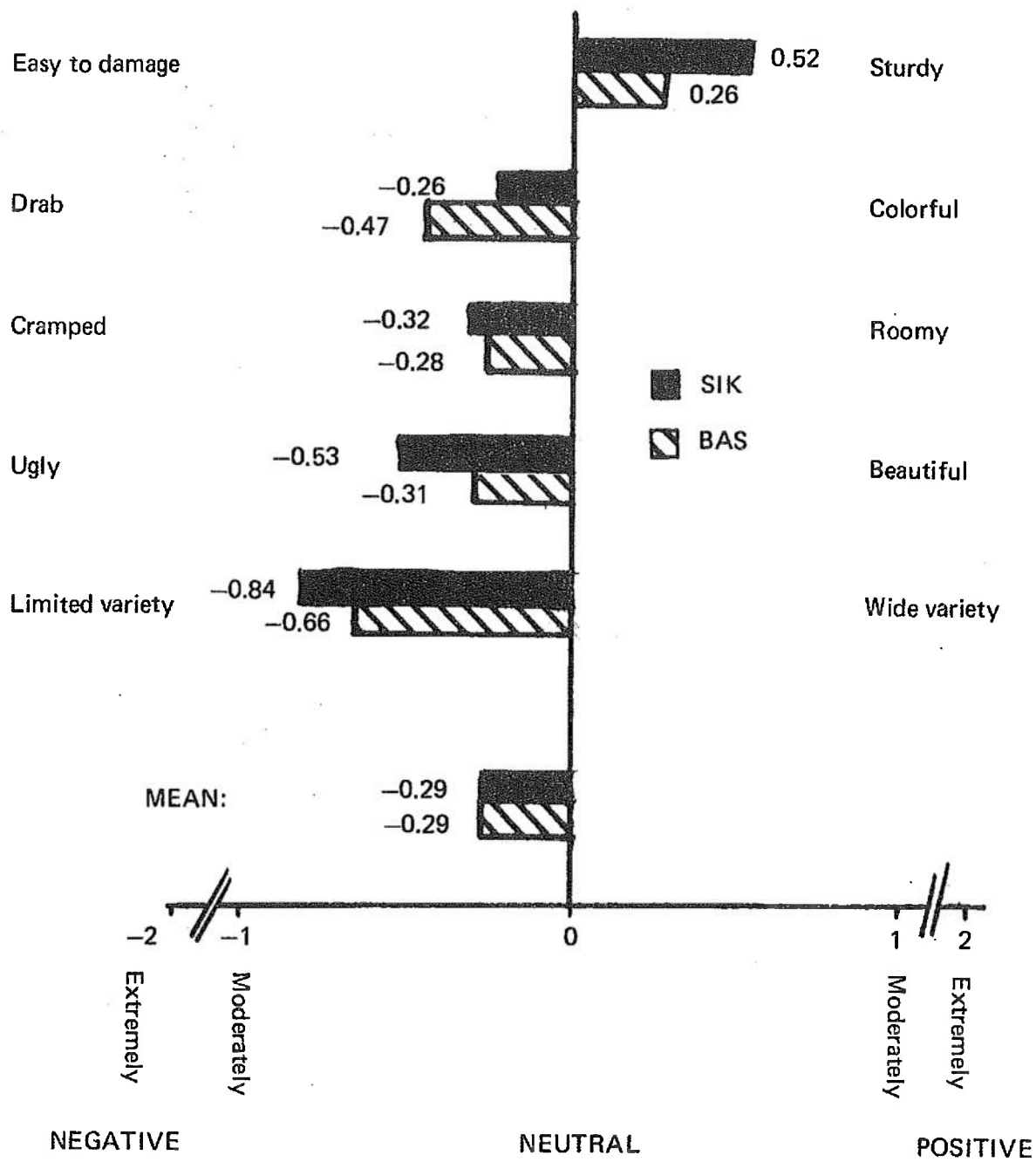
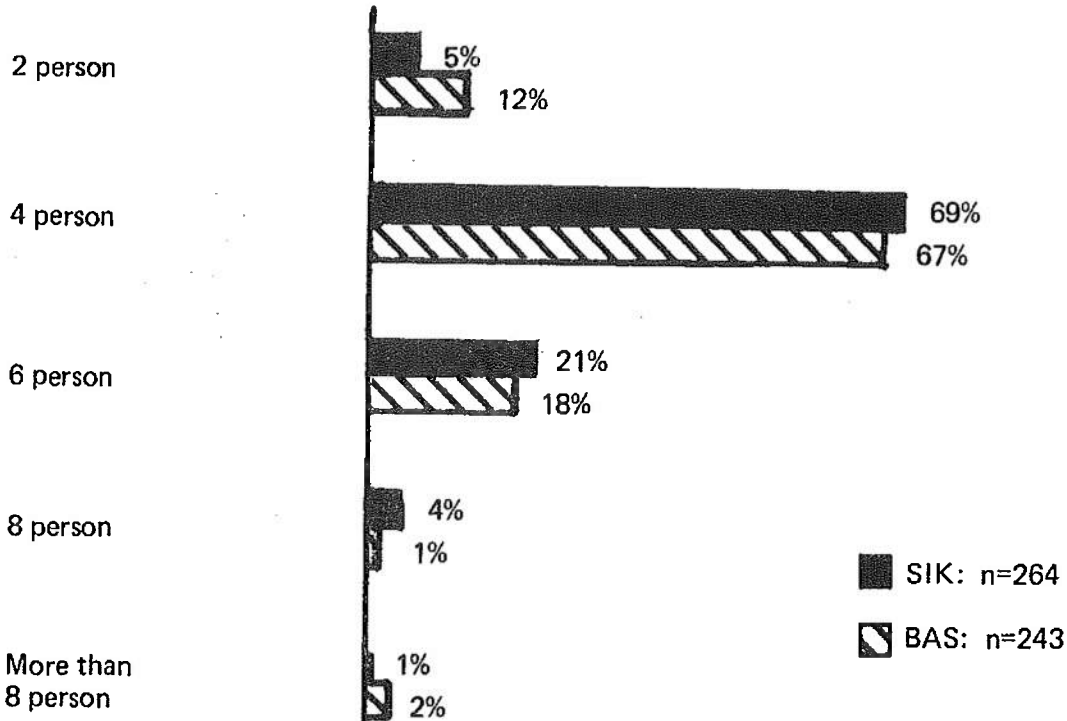


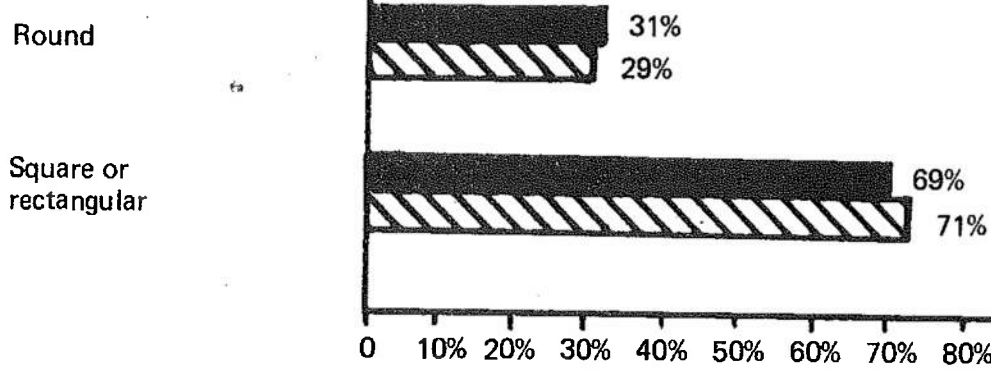
Table 29

Table Preference

SIZE



SHAPE

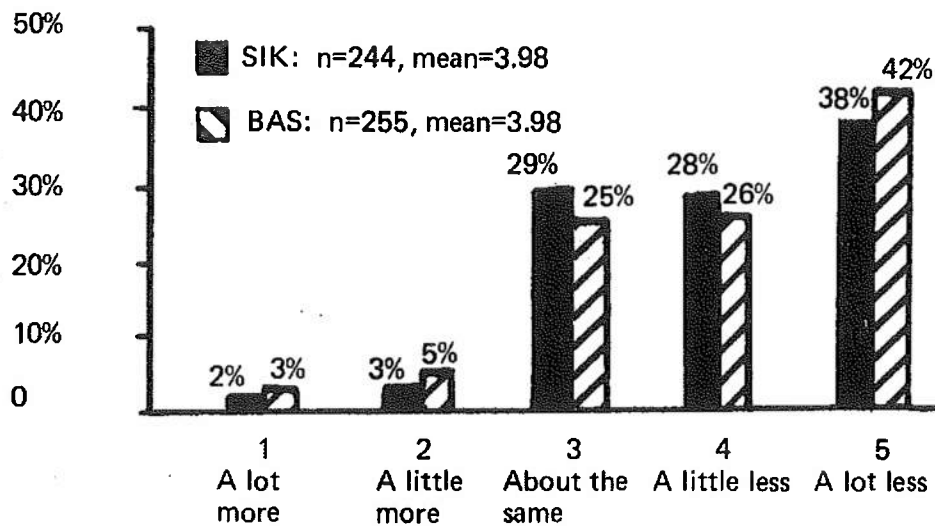


**Table 30**  
**Music Preferences**

<b>TYPE</b>	<b>SIK</b>	<b>BAS</b>
A variety of the following	28%	33%
Hard rock	18%	10%
Popular	12%	10%
Soul	11%	9%
Instrumental	7%	13%
Rock and Roll	7%	5%
Any type is fine	5%	7%
Classical	4%	3%
Country western	3%	6%
Jazz	3%	2%
Other	2%	2%
Do not want music	0%	1%

**Table 31**

**Military Atmosphere**



**Table 32**

**Opinions Concerning Specific Policies**

	Does Rule Exist				Feeling About Rules					
	Yes		No		Enforce or institute		Abolish or not institute		No opinion	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Dress regulations	63%	75%	37%	25%	14%	24%	48%	38%	39%	38%
Not allowing civilian guests	29%	38%	71%	62%	13%	14%	34%	31%	53%	55%
Calling "at ease" when officer enters	8%	12%	92%	88%	8%	5%	40%	42%	53%	54%
No smoking	11%	16%	89%	84%	12%	11%	34%	32%	54%	56%
Officers and NCO's permitted to cut in line	10%	15%	90%	85%	8%	11%	45%	43%	47%	46%
Separation of officers and NCO's from enlisted men	14%	22%	86%	78%	7%	11%	41%	39%	52%	50%

to those surveyed at Travis AFB (Branch and Meiselman, 1973), the airmen at Minot AFB appeared to know just what behavioral requirements exist for them in their dining facility. The dress code policy was known by most of the men; the vast majority thought that none of the other rules listed exist at Minot AFB. There was also no strong sentiment expressed to enforce or institute any of the rules listed, with the majority expressing "no opinion."

**Part XI: Hours of Operation.** The data presented in Table 33 indicates a curious pattern; most of the dissatisfaction with the hours reflects a minority opinion (albeit, a fairly large minority opinion) desiring considerably extended hours, and principally an extension to later closing times for each meal. Even adjusting the hours by 30 minutes each way to exceed the mean response will not satisfy the largest dissatisfied groups, who want the facilities open an hour or more earlier or later. One possible solution to this problem would be a continuously open facility.

**Part XII: Convenience of Location.** Table 34 indicates that the BAS group usually drove between home, job site, and dining facility. For the SIK's the dining facilities were a convenient walk from the living areas, but apparently the job sites were so far removed that the percentage who drove increased considerably. Table 35 indicates the same phenomenon, specifying how many minutes it would take to walk from place to place. Some 64% of the SIK's can walk from the living area to the dining facility but the job sites make walking within reasonable times limits difficult.

**Part XIII: Dining Companions.** Table 36 presents another interesting pattern. Recall that the BAS group desired slightly smaller sized tables than the SIK group (Table 29), and now notice that the BAS group is consistently rating each of these social factors less positively than the SIK group. Though not surprising because the BAS group is much more heterogeneous in background characteristics (Appendix II), it is nevertheless interesting that the SIK group apparently finds more of their social needs met in the dining facilities than the BAS group.

**Part XIV: Expense.** Although expense had no substantial effect on attendance (Table 6), this opportunity was used to gauge consumer opinions concerning the separate rations system. Table 37 presents consumer reaction to the policies governing the current

**Table 33**

**Consumers' Opinions of the HOURS of OPERATION**

**Weekdays: Monday to Friday**

	Breakfast		Mid-Day Meal		Evening Meal	
	SIK	BAS	SIK	BAS	SIK	BAS
From:						
1 hr or more earlier	17%	21%	16%	13%	17%	16%
30 min earlier	7%	7%	12%	8%	9%	4%
15 min earlier	1%	2%	5%	4%	6%	5%
Sufficient as it is	75%	71%	68%	75%	68%	75%
MEAN IN MINUTES:	13	15	14	11	14	11
To:						
1 hr or more later	31%	25%	23%	21%	29%	23%
30 min later	6%	9%	11%	10%	8%	10%
15 min later	2%	1%	3%	3%	2%	3%
Sufficient as it is	61%	65%	64%	67%	61%	65%
MEAN IN MINUTES:	21	18	17	16	20	17

**Weekends: Saturday and Sunday**

	Breakfast		Mid-Day Meal		Evening Meal	
	SIK	BAS	SIK	BAS	SIK	BAS
From:						
1 hr or more earlier	21%	16%	19%	17%	18%	16%
30 min earlier	4%	4%	10%	7%	7%	5%
15 min earlier	2%	3%	4%	3%	4%	3%
Sufficient as it is	73%	77%	68%	74%	71%	76%
MEAN IN MINUTES:	14	11	15	12	13	12
To:						
1 hr or more later	35%	24%	28%	19%	28%	21%
30 min later	4%	4%	7%	9%	8%	8%
15 min later	2%	3%	4%	2%	2%	3%
Sufficient as it is	60%	70%	62%	69%	62%	68%
MEAN IN MINUTES:	22	16	19	15	19	15



Table 34

## Usual Means of Travel

	Walk		Drive		Ride		Bus		Other	
	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS	SIK	BAS
Between living area and dining facility	72%	24%	20%	54%	4%	7%	0%	½% *	4%	14%
Between job site and dining facility	36%	14%	40%	62%	18%	12%	2%	½% *	4%	11%
Between living area and job site	37%	8%	40%	76%	19%	14%	2%	2%	1%	½% *

\*: Less than ½%

Table 35

## Walking Time

## SIK

Minutes:	1-5	6-10	11-15	16-20	21-25	26-30	Over 30
Between living area and dining facility	64%	10%	12%	5%	2%	½% *	7%
Between job site and dining facility	13%	17%	32%	20%	7%	5%	5%
Between living area and job site	15%	20%	28%	12%	7%	4%	14%

## BAS

Minutes:	1-5	6-10	11-15	16-20	21-25	26-30	Over 30
Between living area and dining facility	29%	6%	8%	9%	4%	4%	41%
Between job site and dining facility	16%	19%	23%	15%	8%	6%	13%
Between living area and job site	5%	7%	11%	14%	2%	7%	53%

\*: Less than ½%

**Table 36**  
**Social Aspects of Dining Facilities**

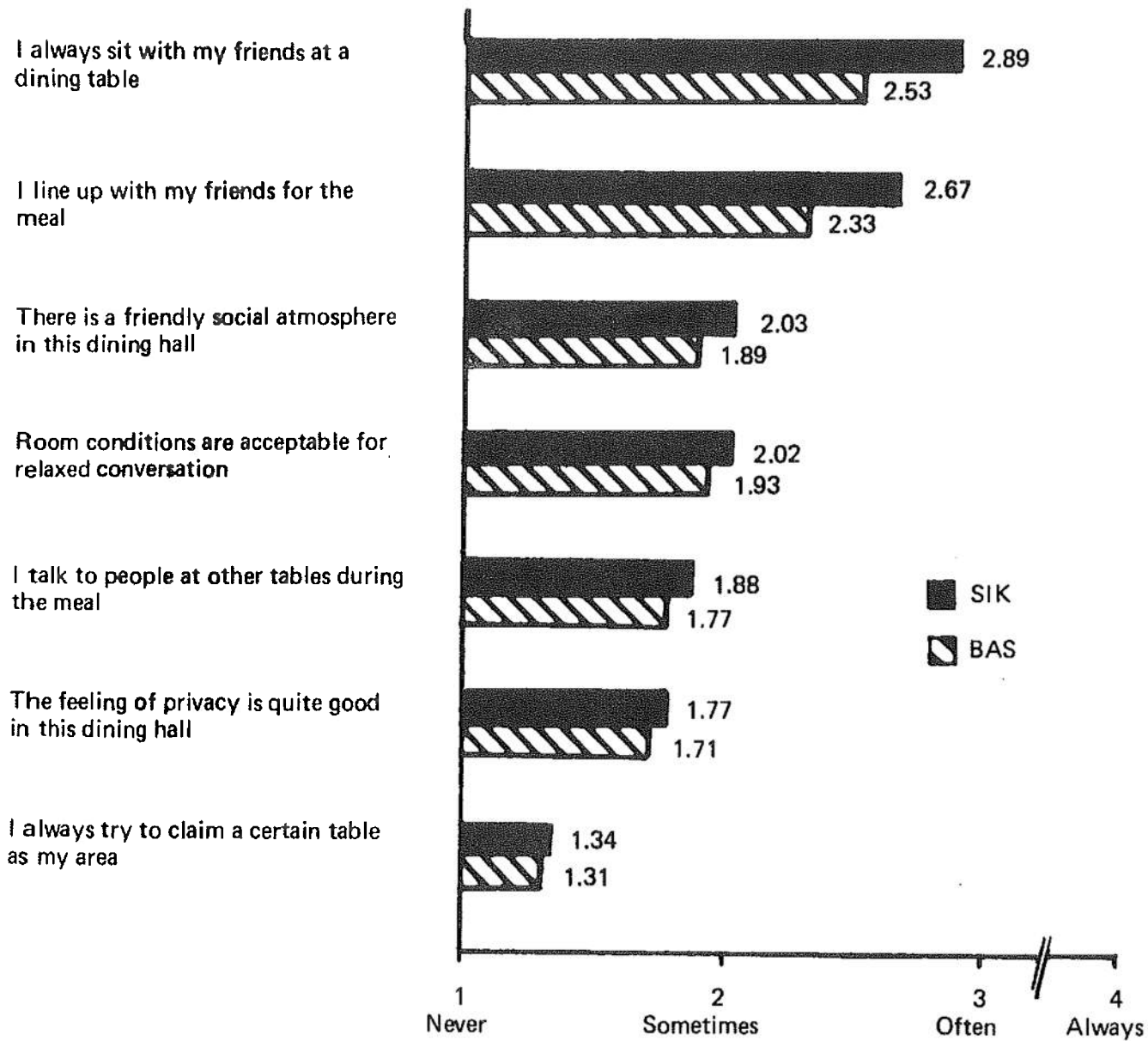
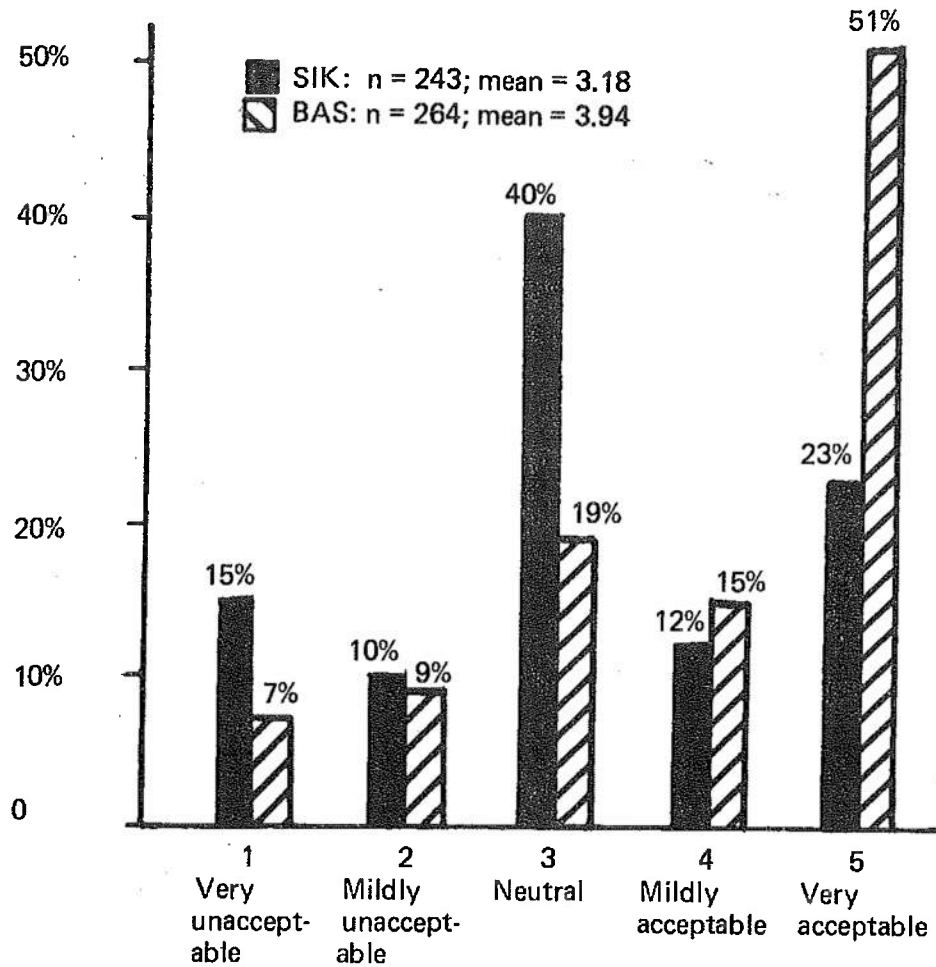


Table 37

Opinions Concerning Current Separate Rations System

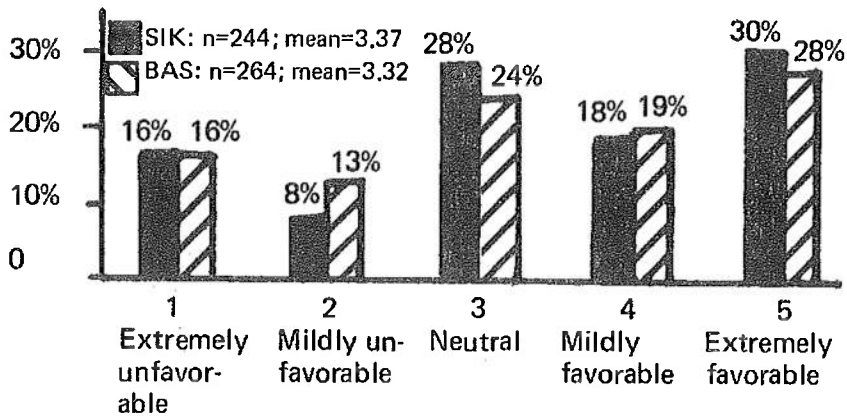


system, indicating that the BAS group viewed them as quite acceptable, while the SIK group was essentially neutral. Table 38 presents the consumers' reactions to three alternative separate ration proposals. Proposal 2, which is basically the concept being tested at Shaw AFB, was the least preferred as was the case at Travis AFB; the current system (proposal 3) was viewed as neutral to slightly favorable; and the concept of putting everyone on separate ration status and charging a fixed price for each meal (proposal 1) was rated the most favorable of the alternatives presented.

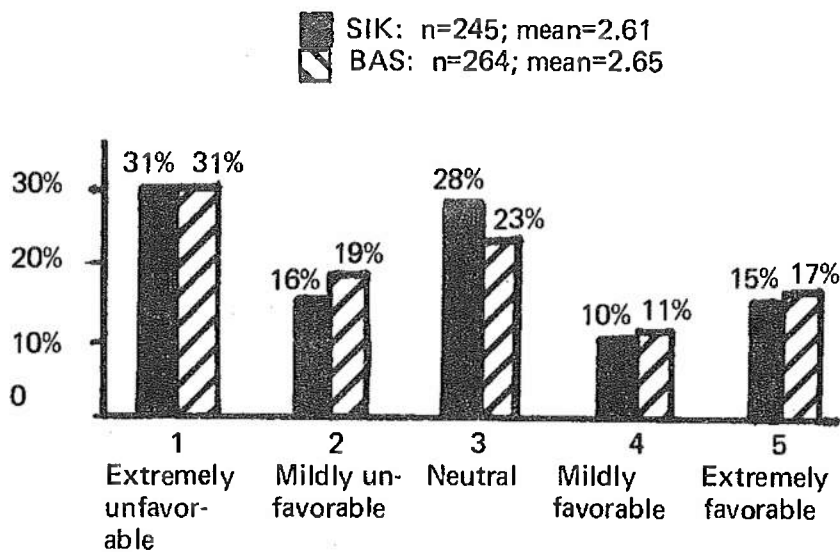
**Commercial Food Service Attractions.** Whenever improvements and alternatives are being considered for military food service, frequent references are made to the successes of specific institutional or industrial food service systems, with the tacit assumption that the military should emulate these commercial systems. For the purpose of knowing exactly what the military consumer, if he were a civilian, would desire for an inexpensive noon meal or for an evening dinner, he was asked to rank order 10 factors in importance in choosing a facility for a noon meal (Table 39). Notice that the quality of food is far and away the most important factor for both groups. The close agreement between the two groups is also encouraging to the planner because the homogeneous desires of heterogeneous groups can be met with a common solution. Previous military surveys (Branch and Meiselman, 1972; Branch and Meiselman, 1973) typically indicate that the consumers stressed improvement of food quality, variety, and quantity in that order (Minot AFB consumers valued quantity more than variety). Table 39, however, intersperses price, cleanliness, and convenience of location with those three food factors, indicating that the military food service system is meeting the consumer expectations for price, cleanliness, and convenience of location. Though the price factor is not surprising in military food service and location is not surprising in Army food service, it is very encouraging to have evidence that the cleanliness of military food service meets consumer expectations.

Table 40 indicates the rank ordering of the same ten factors for an evening dinner, with much the same pattern as for an inexpensive noon meal. The factor of pleasantness of personnel has been conspicuously low in both tables.

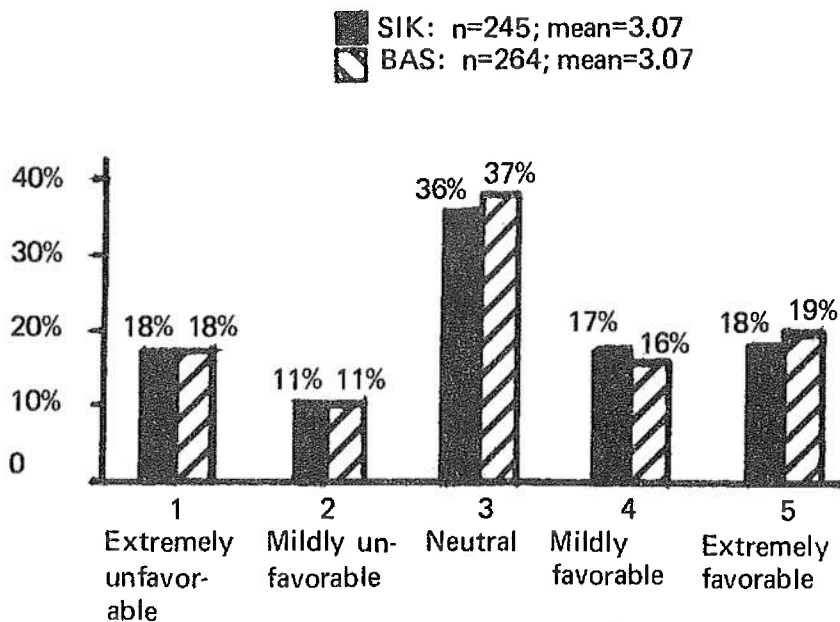
**Table 38**  
**Alternative Separate Rations Proposals**



**Proposal 1:** In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the meals he eats in a military dining facility (breakfast: 35¢; mid-day meal: 80¢; evening meal: 60¢).



**Proposal 2:** In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the specific item he takes from the serving line (2 eggs: 15¢; hamburger: 20¢; french fries: 10¢; chicken: 45¢).



**Proposal 3:** The current system gives some people a separate rations allowance and requires them to pay for each meal they eat in a dining facility. The others who do not receive that allowance are authorized to eat in dining facilities without charge. This system should be retained.

Table 39

The Importance of 10 Factors in Choosing a NOON MEAL from a Civilian Facility

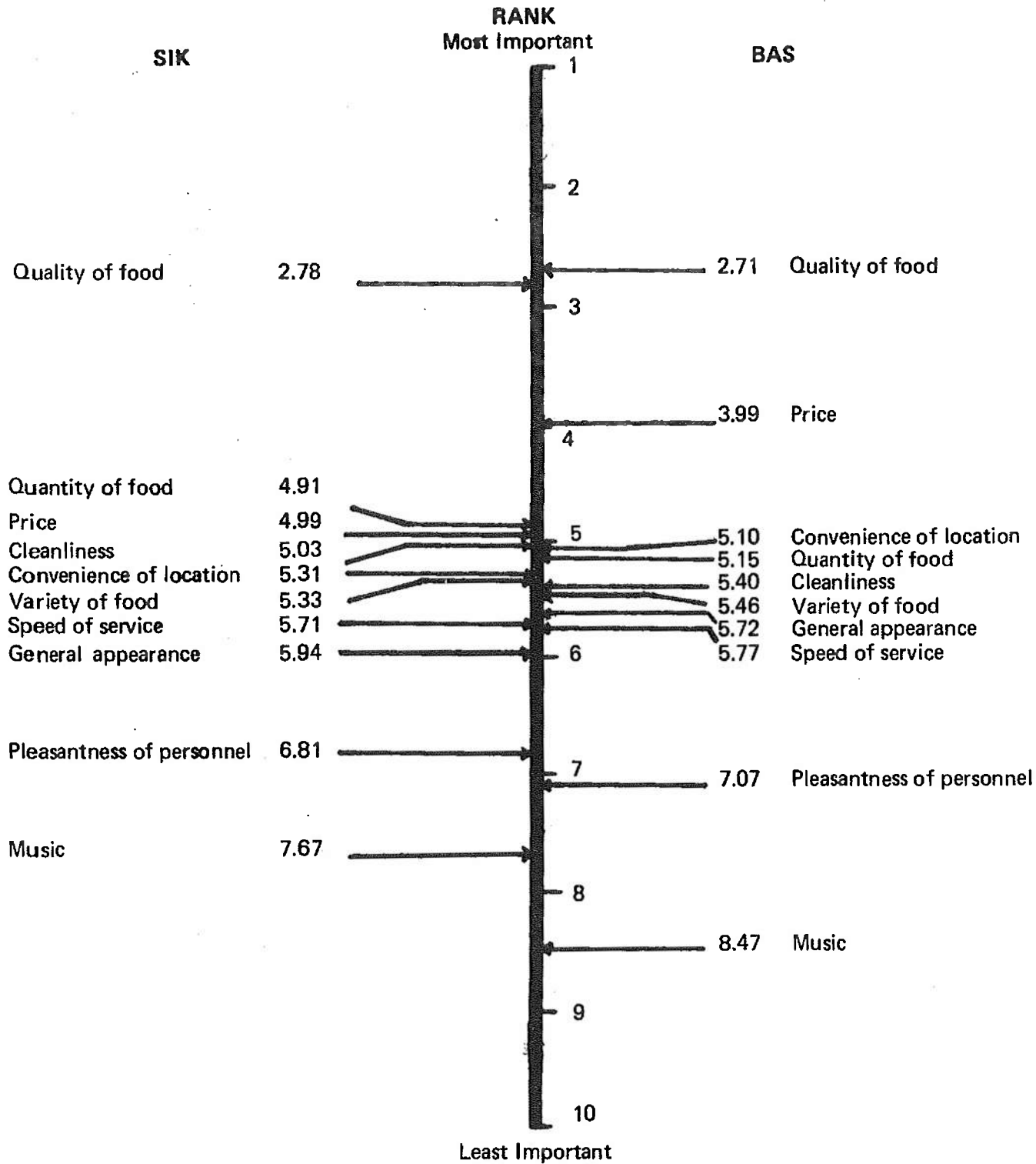
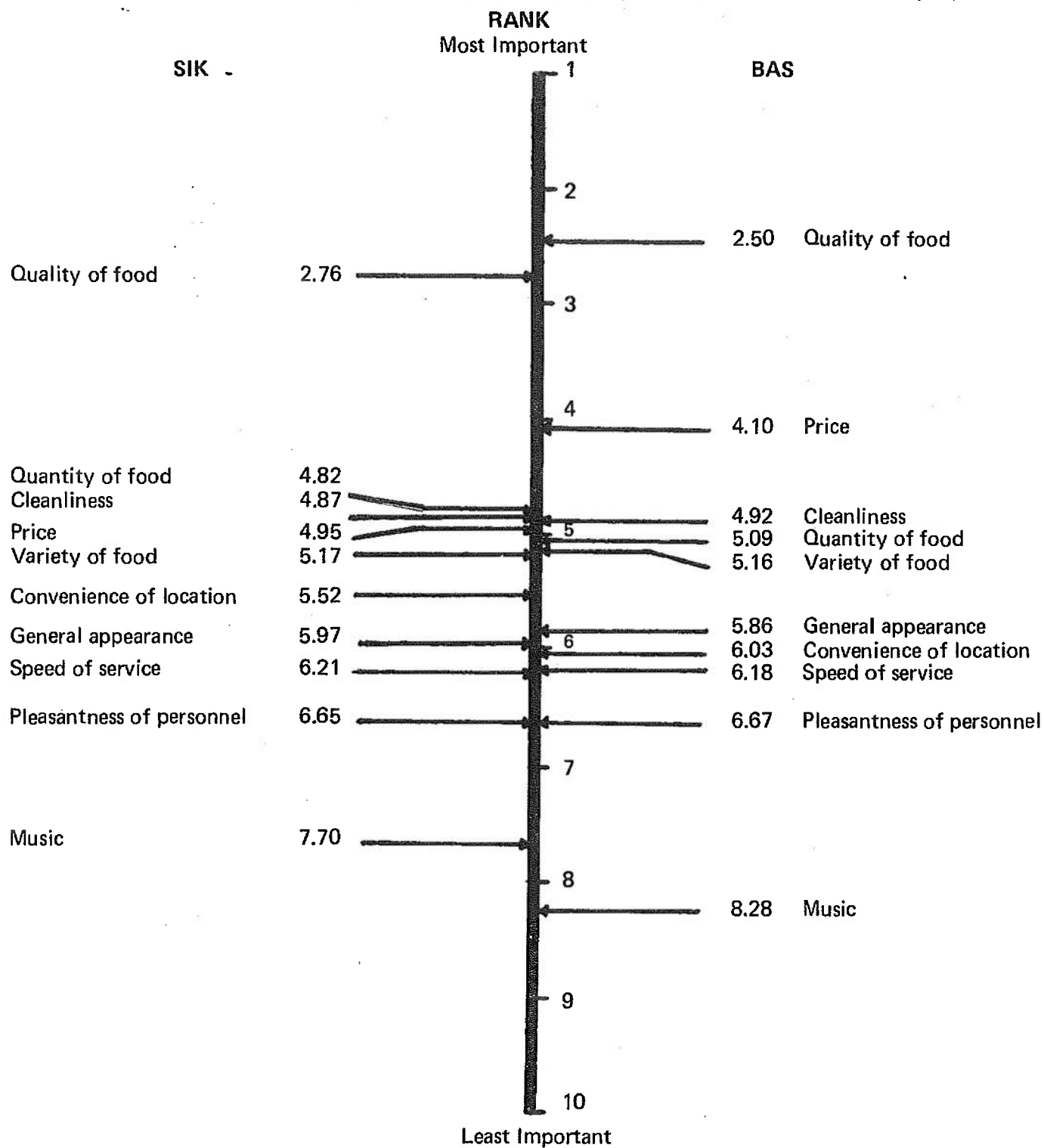


Table 40

The Importance of 10 Factors in Choosing an EVENING MEAL from a Civilian Facility



## CONCLUSIONS AND RECOMMENDATIONS

The reader should bear in mind that the following statements are made solely to reflect the consumer's preferences. Words like "must" and "should" are reflections of the consumers' attitudes, and the authors fully realize that other considerations must be attended to before final decisions can be made and implemented.

1. Data does not support the contention that only those people who dislike the military complain about the food service system.
2. The current method of obtaining attendance rates in Air Force dining facilities is based on a three meal a day/21 meals a week assumption. This assumption is untenable because these surveys of Air Force personnel indicate that a majority do not eat 21 meals a week. Breakfast is the meal most often missed and it also accounts for the most change in meal patterns after entering the military.
3. SIK attendance in the dining facilities can be increased, particularly at the noon and evening meal periods. BAS attendance also has a potential for increasing at the noon meal.
4. Although attendance might not change appreciably, this is not to imply that the consumers do not find fault with their existing food service system. The quality of the food must be improved; this goal can be achieved by many methods, so the specific choice of method is best deferred to food service personnel.
5. The variety of foods must be increased. Results of a technical report on Food Preferences by this laboratory will identify which items are desired more or less frequently.
6. Main course meat items are of particular concern to the consumers. Meat items are served in insufficient quantity and without acceptable variety. Increased portion size, self-service, and/or unlimited second helpings would all resolve the quantity problem.
7. The most serious non-food feature, the speed of service in the dining facilities, must be addressed and solved.



8. The image of the cooks and dining facility personnel is not very good, and self-bussing would not be well received.

9. While it is clear that many of the consumers are aware of the rules of the dining facilities concerning dress regulations and the like, make them explicit so that each consumer knows what standards of behavior are expected of him; reduce the military atmosphere.

10. The degree to which the consumers view each of the fourteen food service factors as problems and to which each influences non-utilization of dining facilities is slightly lower at Minot AFB than at Travis AFB, but the order of priorities and the opinions concerning the specific elements within each factor are remarkably similar.

## REFERENCES

- Branch, L. G. and H. L. Meiselman. Consumer reaction to the Fort Lewis CAFe system. United States Army Natick Laboratories Technical Report 72-64-PR, 1972.
- Branch, L. G. and H. L. Meiselman. The consumer's opinions of the food service system: The 1973 Travis Air Force Base survey. United States Army Natick Laboratories Technical Report 73-52-PR, 1973.
- Bustead, R. L. (Ed.) CAFe experiment at Fort Lewis, Washington. United States Army Natick Laboratories Technical Report 73-20-OR/SA, 1972.
- Kiess, H. O., J. B. Swanson, and R. F. Q. Johnson. Fort Lewis dining facilities consumer survey. United States Army Natick Laboratories Technical Report 72-44-PR, 1972.
- Meiselman, H. L., L. G. Branch, D. Waterman, M. Taylor. The 1973 food preference survey. United States Army Natick Laboratories Technical Report, in press.

# CONSUMER'S OPINIONS OF FOOD SERVICE SYSTEMS

## APPENDIX I

U. S. ARMY NATICK LABORATORIES

NOVEMBER 1972

Booklet Serial Number

--

In the grid to your right, please fill in the ovals corresponding with the Booklet Serial Number that is stamped directly above the numeric grid.

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



Where were you raised? Darken the appropriate circle.

- ☐ ① In the country
- ☐ ② In a town with less than 2,500 people
- ☐ ③ In a town or small city with more than 2,500, but less than 25,000 people
- ☐ ④ In a city with more than 25,000, but less than 100,000 people
- ☐ ⑤ In a large city with more than 100,000, but less than one million people
- ☐ ⑥ In a very large city with over one million people
- ☐ ⑦ In a suburb of a large or very large city

In what STATE were you raised? Darken the appropriate circle.

- |  |  |
|--|--|
| <input type="radio"/> 01 Alabama       | <input type="radio"/> 28 Nevada  |
| <input type="radio"/> 02 Alaska        | <input type="radio"/> 29 New Hampshire   |
| <input type="radio"/> 03 Arizona       | <input type="radio"/> 30 New Jersey  |
| <input type="radio"/> 04 Arkansas      | <input type="radio"/> 31 New Mexico  |
| <input type="radio"/> 05 California    | <input type="radio"/> 32 New York  |
| <input type="radio"/> 06 Colorado      | <input type="radio"/> 33 North Carolina  |
| <input type="radio"/> 07 Connecticut   | <input type="radio"/> 34 North Dakota  |
| <input type="radio"/> 08 Delaware      | <input type="radio"/> 35 Ohio  |
| <input type="radio"/> 09 Florida       | <input type="radio"/> 36 Oklahoma  |
| <input type="radio"/> 10 Georgia       | <input type="radio"/> 37 Oregon  |
| <input type="radio"/> 11 Hawaii        | <input type="radio"/> 38 Pennsylvania  |
| <input type="radio"/> 12 Idaho         | <input type="radio"/> 39 Rhode Island  |
| <input type="radio"/> 13 Illinois      | <input type="radio"/> 40 South Carolina  |
| <input type="radio"/> 14 Indiana       | <input type="radio"/> 41 South Dakota  |
| <input type="radio"/> 15 Iowa          | <input type="radio"/> 42 Tennessee   |
| <input type="radio"/> 16 Kansas        | <input type="radio"/> 43 Texas   |
| <input type="radio"/> 17 Kentucky      | <input type="radio"/> 44 Utah  |
| <input type="radio"/> 18 Louisiana     | <input type="radio"/> 45 Vermont   |
| <input type="radio"/> 19 Maine         | <input type="radio"/> 46 Virginia  |
| <input type="radio"/> 20 Maryland      | <input type="radio"/> 47 Washington  |
| <input type="radio"/> 21 Massachusetts | <input type="radio"/> 48 West Virginia   |
| <input type="radio"/> 22 Michigan      | <input type="radio"/> 49 Wisconsin   |
| <input type="radio"/> 23 Minnesota     | <input type="radio"/> 50 Wyoming   |
| <input type="radio"/> 24 Mississippi   | <input type="radio"/> 51 Other U.S. territories or possessions (For example, Puerto Rico or Virgin Islands.) |
| <input type="radio"/> 25 Missouri      | <input type="radio"/> 52 Outside the U.S. or U.S. Territories or possessions.                                |
| <input type="radio"/> 26 Montana       |  |
| <input type="radio"/> 27 Nebraska      |  |

Darken the circle which indicates your PRESENT GRADE.

- ☐ ① E-1
- ☐ ② E-2
- ☐ ③ E-3
- ☐ ④ E-4
- ☐ ⑤ E-5
- ☐ ⑥ E-6
- ☐ ⑦ E-7
- ☐ ⑧ E-8
- ☐ ⑨ E-9

Do you receive a SEPARATE RATIONS ALLOWANCE (money instead of free meals)?

Darken the appropriate circle.

- ☐ ① Yes
- ☐ ② No

What ONE TYPE OF COOKING were you raised on? Darken the appropriate circle.

- |   |   |
|---|---|
| <input type="radio"/> 01 Chinese                | <input type="radio"/> 09 Jewish                       |
| <input type="radio"/> 02 English                | <input type="radio"/> 10 Mexican                      |
| <input type="radio"/> 03 French                 | <input type="radio"/> 11 New England                  |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe)    |
| <input type="radio"/> 05 German                 | <input type="radio"/> 13 Soul                         |
| <input type="radio"/> 06 Greek                  | <input type="radio"/> 14 Southern                     |
| <input type="radio"/> 07 Italian                | <input type="radio"/> 15 Spanish (not Mexican)        |
| <input type="radio"/> 08 Japanese               | <input type="radio"/> 16 Other (please specify _____) |

What TYPE OF COOKING OR SPECIALTY FOODS do you like best? Please darken the circles of your TOP THREE CHOICES.

- |   |   |
|---|---|
| <input type="radio"/> 01 Chinese                | <input type="radio"/> 09 Jewish                       |
| <input type="radio"/> 02 English                | <input type="radio"/> 10 Mexican                      |
| <input type="radio"/> 03 French                 | <input type="radio"/> 11 New England                  |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe)    |
| <input type="radio"/> 05 German                 | <input type="radio"/> 13 Soul                         |
| <input type="radio"/> 06 Greek                  | <input type="radio"/> 14 Southern                     |
| <input type="radio"/> 07 Italian                | <input type="radio"/> 15 Spanish (not Mexican)        |
| <input type="radio"/> 08 Japanese               | <input type="radio"/> 16 Seafood                      |
|   | <input type="radio"/> 17 Other (please specify _____) |

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK, REGARDLESS OF WHERE YOU EAT THEM? If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK AT YOUR DINING FACILITY?

If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**BEFORE YOU ENTERED THE MILITARY, WHICH MEALS DID YOU USUALLY EAT?**

If you ate "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**WHERE DO YOU EAT** when you do not eat in the military dining facility? Indicate how often by filling in one circle in each line.

	Never	Less than once a week	1-3 times a week	4-7 times a week	8-14 times a week	15 or more times a week
a. Private residence (girlfriend's house, friend's or relative's house, your home, your barracks, bringing your food, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. An installation snack facility (the bowling alley, the exchange, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. An installation NCO club, EM or Airmen Club, or service club	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Diner, snack bar, pizza parlor, or drive-in off the installation (or having it delivered)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quality restaurant off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Bar or tavern (with alcoholic beverages) off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. From vending machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. From mobile snack or lunch trucks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Other (write it below and indicate how often)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Listed below are 14 GENERAL AREAS OF CONCERN. For each topic or area, indicate whether it is a significant problem, a minor problem, neither a problem nor an attraction, a minor attraction, or a significant attraction for your dining facility in your opinion.

	Area or topic	Signifi- cant Problem	Minor Problem	Neither Problem Nor Attrac- tion	Minor Attrac- tion	Signifi- cant Attrac- tion
a.	Convenience of location	①	②	③	④	⑤
b.	General dining facility environment	①	②	③	④	⑤
c.	Degree of military atmosphere present	①	②	③	④	⑤
d.	Desirable eating companions	①	②	③	④	⑤
e.	Expense	①	②	③	④	⑤
f.	Hours of operation	①	②	③	④	⑤
g.	Monotony of same facility	①	②	③	④	⑤
h.	Quality of food	①	②	③	④	⑤
i.	Quantity of food	①	②	③	④	⑤
j.	Service by dining facility personnel	①	②	③	④	⑤
k.	Variety of the regular meal food (weekday only)	①	②	③	④	⑤
l.	Variety of the regular meal food (weekend only)	①	②	③	④	⑤
m.	Variety of the short order food	①	②	③	④	⑤
n.	Speed of service or lines	①	②	③	④	⑤



For each of the same 14 general areas, indicate whether it is a major reason for your degree of NON-ATTENDANCE at the dining facility, a minor reason for your degree of non-attendance, or not related to your degree of non-attendance.

	Area or topic	Major reason for non- attendance	Minor reason for non- attendance	Not related to non- attendance
a.	Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	General dining facility environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	Degree of military atmosphere present	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	Desirable eating companions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	Expense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	Monotony of same facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h.	Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i.	Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j.	Service by dining facility personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k.	Variety of the regular meal food (weekday only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l.	Variety of the regular meal food (weekend only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m.	Variety of the short order food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n.	Speed of service or lines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you have a REGULARLY SCHEDULED ACTIVITY which keeps you from attending the dining facility at certain times, indicate how many meals per week you do not attend because of this activity. (Indicate "zero meals not attended" if you have no such activity.)

Meals not attended:    0    1    2-4    5    6-7    8-10    More than 10  
                                  ☐    ☐    ☐    ☐    ☐    ☐    ☐

Concerning the degree of MILITARY ATMOSPHERE which you feel exists in your dining facility at the present time, indicate whether you feel there should be MORE or LESS military atmosphere in the future.

A Lot More ①	A Little More ②	About the Same ③	A Little Less ④	A Lot Less ⑤
--------------------	-----------------------	------------------------	-----------------------	--------------------

Indicate how you usually travel between each of the following locations:

	Walk	Drive	Ride	Bus	Other (specify)
a. Living area to your job site	①	②	③	④	⑤ _____
b. Job site to dining facility	①	②	③	④	⑤ _____
c. Living area to dining facility	①	②	③	④	⑤ _____

Indicate approximately how many minutes it takes you to travel by the means you indicated in the previous questions from your:

	1-5 min	6-10 min	11-15 min	16-20 min	21-25 min	26-30 min	Over 30 min
a. Living area to your job site	○	○	○	○	○	○	○
b. Job site to dining facility	○	○	○	○	○	○	○
c. Living area to dining facility	○	○	○	○	○	○	○

Indicate approximately how many MINUTES it would take to WALK from your:

	1-5 min	6-10 min	11-15 min	16-20 min	21-25 min	26-30 min	Over 30 min
a. Living area to your job site	○	○	○	○	○	○	○
b. Job site to dining facility	○	○	○	○	○	○	○
c. Living area to dining facility	○	○	○	○	○	○	○

Is your dining facility ever:

	Never	Sometimes	Often	Always
a. Too cold	①	②	③	④
b. Too warm	①	②	③	④
c. Stuffy	①	②	③	④
d. Smoky	①	②	③	④
e. Full of steam	①	②	③	④
f. Full of unpleasant food odors	①	②	③	④

How often do you find:

	Never	Sometimes	Often	Always
a. Inappropriate or missing silverware	①	②	③	④
b. Not enough condiments (ketchup, etc.)	①	②	③	④
c. Left-overs being served day after day	①	②	③	④
d. Serving line has run out of items	①	②	③	④

For each pair of items below, please indicate your opinion of THE GENERAL CONDITION OF YOUR DINING FACILITY by darkening the circle which comes closest to describing your feelings.

		Extremely	Moderately	Neutral	Moderately	Extremely	
a.	Clean kitchen area	①	②	③	④	⑤	Dirty kitchen area
b.	Insect infested	①	②	③	④	⑤	Insect free
c.	Rodent infested	①	②	③	④	⑤	Rodent free
d.	Clean serving counters	①	②	③	④	⑤	Dirty serving counters
e.	Dirty dispensing devices	①	②	③	④	⑤	Clean dispensing devices
f.	Dirty silverware	①	②	③	④	⑤	Clean silverware
g.	Clean trays	①	②	③	④	⑤	Dirty trays
h.	Clean dishes and glasses	①	②	③	④	⑤	Dirty dishes and glasses
i.	Dirty floors	①	②	③	④	⑤	Clean floors
j.	Dirty tables and chairs	①	②	③	④	⑤	Clean tables and chairs
k.	Brightly lighted	①	②	③	④	⑤	Dimly lighted
l.	Sunny	①	②	③	④	⑤	Lacking in sunlight
m.	Quiet	①	②	③	④	⑤	Noisy
n.	Crowded	①	②	③	④	⑤	Uncrowded
o.	Roomy	①	②	③	④	⑤	Cramped
p.	Poorly designed	①	②	③	④	⑤	Well designed
q.	Pleasant view	①	②	③	④	⑤	Unpleasant view
r.	Low number of safety hazards	①	②	③	④	⑤	High number of safety hazards
s.	Unpleasant exterior appearance	①	②	③	④	⑤	Pleasant exterior appearance
t.	Unpleasant interior appearance	①	②	③	④	⑤	Pleasant interior appearance

Indicate your opinions about CONVENIENCES WITHIN YOUR DINING FACILITY.

- |    |  | Extremely             | Moderately            | Neutral               | Moderately            | Extremely             |   |
|----|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|
| a. | Convenient to enter & leave                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Inconvenient to enter & leave                   |
| b. | Far from washroom                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Close to washroom                               |
| c. | Large space between tables allows easy passage | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Small space between tables forbids easy passage |
| d. | Inadequate table size for size of trays        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Adequate table size for trays                   |

Is the overall APPEARANCE OR ATMOSPHERE of your dining facility:

- |    |           |                       |                       |                       |                       |                       |             |
|----|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------|
| a. | Colorful  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Drab        |
| b. | Cheerful  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Dreary      |
| c. | Cluttered | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Uncluttered |
| d. | Beautiful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Ugly        |
| e. | Relaxed   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Tense       |
| f. | Sociable  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Unsociable  |
| g. | Crowded   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Uncrowded   |

Are the TABLES in your dining facility:

- |    |              |                       |                       |                       |                       |                       |                 |
|----|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------|
| a. | Colorful     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Drab            |
| b. | Beautiful    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Ugly            |
| c. | Wide variety | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Limited variety |
| d. | Sturdy       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Easy to damage  |
| e. | Roomy        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Cramped         |

Indicate the TABLE SIZE you prefer:

2 persons	4 persons	6 persons	8 persons	More than 8 persons
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate the TABLE SHAPE you prefer:

- ☐ Round
- ☐ Square or Rectangular

Indicate how often each of the following statements about SOCIAL aspects of your dining facility applies to you.

	Never	Sometimes	Often	Always
I line up with my friends for the meal	①	②	③	④
I always sit with my friends at a dining table	①	②	③	④
I always try to claim a certain table as my area	①	②	③	④
The feeling of privacy is quite good in this dining hall	①	②	③	④
I talk to people at other tables during the meal	①	②	③	④
Room conditions are acceptable for relaxed conversation	①	②	③	④
There is a friendly social atmosphere in this dining hall	①	②	③	④
Do you have MUSIC in your dining facility now?		Yes ①	No ①	

What is your reaction to having MUSIC in the dining facilities:

Very Acceptable ①	Mildly Acceptable ②	Neutral ③	Mildly Unacceptable ④	Very Unacceptable ⑤
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Indicate the one type of music you would most prefer in the dining facilities:

- ☐ Any type is fine
- ☐ Hard rock
- ☐ Soul
- ☐ Popular
- ☐ Rock and roll
- ☐ Jazz
- ☐ Instrumental
- ☐ Classical
- ☐ Country western
- ☐ A variety of the above
- ☐ Other (write it here) \_\_\_\_\_
- ☐ Do not want music

Does your dining facility use a SELF BUSSING system in which each person carries his own tray to the dishwashing area?

Yes No  
① ②

Indicate how you do or would feel about having SELF BUSSING in the dining facilities:

Very Mildly Mildly Very  
Acceptable Acceptable Neutral Unacceptable Unacceptable  
① ② ③ ④ ⑤

Indicate your opinion about the policies concerning the SEPARATE RATIONS SYSTEMS:

Very Mildly Mildly Very  
Acceptable Acceptable Neutral Unacceptable Unacceptable  
① ② ③ ④ ⑤

Indicate your opinion of the following proposals:

a. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the meals he eats in a military dining facility (breakfast: 35 cents; mid-day meal: 80 cents; evening meal: 60 cents).

Extremely Mildly Mildly Extremely  
Unfavorable Unfavorable Neutral Favorable Favorable  
① ② ③ ④ ⑤

b. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the specific items he takes from the serving line (2 eggs: 15 cents; hamburger: 20 cents; french fries: 10 cents; chicken: 45 cents).

Extremely Mildly Mildly Extremely  
Unfavorable Unfavorable Neutral Favorable Favorable  
① ② ③ ④ ⑤

c. The current system gives some people a separate rations allowance and requires them to pay for each meal they eat in the dining facility. The others who do not receive that allowance are authorized to eat in the dining facilities without charge. This system should be retained.

Extremely Mildly Mildly Extremely  
Unfavorable Unfavorable Neutral Favorable Favorable  
① ② ③ ④ ⑤

What hours would you like the dining facility to be open for your convenience?

**Weekdays: Monday to Friday**

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To:			
1 hr or more later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Weekends: Saturday and Sunday**

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min earlier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To:			
1 hr or more later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 min later	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sufficient as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is the food in your mess hall ever:

	Never	Sometimes	Often	Always
a. Overcooked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Undercooked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Cold	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Tasteless or bland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Burned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Dried out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Greasy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Tough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Too spicy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Raw	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Still frozen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Too salty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you ever find that the food in your dining facility is, or has:

	Never	Sometimes	Often	Always
a. Gristle or tendon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Excess fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Stringy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Damaged or bruised (e.g., fruit or vegetables)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Over-ripe fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Under-ripe fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Stale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Old looking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Sour (e.g., milk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Spoiled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Off-flavor or odor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other than times of dieting, do you ever LEAVE your dining facility WITHOUT ENOUGH TO EAT?

NEVER                      SOMETIMES                      OFTEN                      ALWAYS

Do you serve yourself or do the dining facility personnel serve you the following items:

	SELF-SERVICE	SERVED BY OTHERS
a. Short order items	<input type="radio"/>	<input type="radio"/>
b. Meat items	<input type="radio"/>	<input type="radio"/>
c. Starches (i.e. potatoes)	<input type="radio"/>	<input type="radio"/>
d. Vegetables	<input type="radio"/>	<input type="radio"/>
e. Salads	<input type="radio"/>	<input type="radio"/>
f. Beverages	<input type="radio"/>	<input type="radio"/>
g. Desserts	<input type="radio"/>	<input type="radio"/>

Are SECOND HELPINGS PERMITTED for the following items?

	Always	Sometimes	Never
a. Short order items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Meat items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Starches (i.e. potatoes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Salads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Beverages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Desserts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Answer the following questions for the regular meal only. Exclude the short order meal.  
Indicate "Not Appropriate" (8) if you have self-service and/or second helpings permitted.

a. What is your opinion about the amount of meat per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

b. What is your opinion about the amount of starches per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

c. What is your opinion about the amount of vegetables per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

d. What is your opinion about the amount of dessert per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

Indicate your opinion about the ABILITY of the COOKS to prepare high quality meals in your dining facilities.

Very Poor			Average			Excellent
①	②	③	④	⑤	⑥	⑦

Indicate your opinion about the ATTITUDES of the dining facility WORKERS to make your meal as pleasant as possible.

Very Poor			Average			Excellent
①	②	③	④	⑤	⑥	⑦

Indicate your opinion of the VARIETY of offerings at any particular WEEKDAY meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a. For short order foods:		①	②	③	④
b. For meats:		①	②	③	④
c. For starches:		①	②	③	④
d. For vegetables:		①	②	③	④
e. For salads:		①	②	③	④
f. For beverages:		①	②	③	④
g. For desserts:		①	②	③	④

Indicate your opinion of the VARIETY of offerings at any particular WEEKEND meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a.	For short order foods:	①	②	③	④
b.	For meats:	①	②	③	④
c.	For starches:	①	②	③	④
d.	For vegetables:	①	②	③	④
e.	For salads:	①	②	③	④
f.	For beverages:	①	②	③	④
g.	For desserts:	①	②	③	④

Indicate your opinion of the VARIETY of foods offered in the menu during the course of a month or so.

	We need:	Many More Items	A Few More Items	Items Now Enough	Fewer Items Acceptable
a.	For short order:	①	②	③	④
b.	For meats:	①	②	③	④
c.	For starches:	①	②	③	④
d.	For vegetables:	①	②	③	④
e.	For salads:	①	②	③	④
f.	For beverages:	①	②	③	④
g.	For desserts:	①	②	③	④

Is CARRY OUT SERVICE available in your dining facility? (Disregard any flight feeding programs in this and the following two questions.)

Yes ① No ②

Indicate how you do or would feel about CARRY OUT SERVICE being available from the dining facilities.

Extremely  
opposed ① ② ③ Neutral ④ ⑤ ⑥ Extremely  
Enthusiastic ⑦

If such a CARRY OUT SERVICE were available, how do you feel it would influence your attendance in the military dining facilities?

- ① No influence.
- ② I would eat a FEW MORE meals per week.
- ③ I would eat MANY MORE meals per week.

How long do you USUALLY have to WAIT in line at the headcount station TO GET ADMITTED for a meal:

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT IN THE SERVING LINE after the headcount before you get your food?

- ☐ ① I never have to wait in line.
- ☐ ② I wait between one and five minutes.
- ☐ ③ I wait between five and ten minutes.
- ☐ ④ I wait between ten and fifteen minutes.
- ☐ ⑤ I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT AT THE DISH WASHING AREA when self-bussing?

- ☐ ① I never have to wait in line.
- ☐ ② I wait between one and five minutes.
- ☐ ③ I wait between five and ten minutes.
- ☐ ④ I wait between ten and fifteen minutes.
- ☐ ⑤ I wait longer than fifteen minutes.
- ☐ ⑥ Not applicable; no self-bussing.

For each of the following RULES FOR BEHAVIOR, first indicate whether or not the rules exist in your dining facility and then indicate whether you feel it should be ENFORCED OR INSTITUTED, whether you feel it should be ABOLISHED OR NOT INSTITUTED, or whether you have NO OPINION about it.

	Does Rule Exist?		Enforce or Institute	Abolish or not Institute	No Opinion
	Yes	No			
a. Dress regulations	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
b. Not allowing non-military guests	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
c. Calling "at ease" when officer enters	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
d. No smoking	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
e. Officers and NCO's permitted to cut in line	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③
f. Separation of officers and NCO's from enlisted men	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ①	<input type="radio"/> ②	<input type="radio"/> ③

Now we would like to have your opinions of food service systems in general. Therefore, answer the following questions as if your circumstances were different and you held a civilian job instead of being in military service.

Suppose you regularly went out to eat your NOON MEAL and had many places to choose from. Indicate the order of IMPORTANCE of each of the following 10 factors in making your CHOICE OF WHERE TO EAT by darkening the circle under "1st" for the most important factor, darkening the circle under "2nd" for the second most important factor, and so on. Each factor then should have one ranking.

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a. Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Speed of service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Availability of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Pleasantness of service personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suppose you regularly went out to eat your **EVENING MEAL** and had many places to choose from. Indicate the order of **IMPORTANCE** of each of the following 10 factors in making your **CHOICE OF WHERE TO EAT** by darkening the one for the most important factor, darkening the two for the second most important factor, and so on. Each factor then should have one ranking.

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a. Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Speed of service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Availability of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Pleasantness of service personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suppose you have decided to have an **INEXPENSIVE NOON** or **EVENING MEAL**. Would you prefer a cafeteria, self-service system or a waitress-service system?

	Definitely	Probably	Neutral	Probably	Definitely	
Self-service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Waitress service

## **APPENDIX II**

**Table 41****Sex of Sample**

	Male	Female	Totals
SIK	87% (211)	13% (31)	100% (242)
BAS	96% (253)	4% (11)	100% (264)

Note: The actual numbers are indicated in the parentheses in this and the following tables.

**Table 42****Race of Sample**

	Caucasian	Negro	Oriental	Other	Totals
SIK	78% (189)	19% (46)	1/2%* (1)	3% (7)	100 1/2% (243)
BAS	81% (213)	17% (44)	0% (0)	3% (7)	101% (264)

**Table 43**  
**Age of Sample**

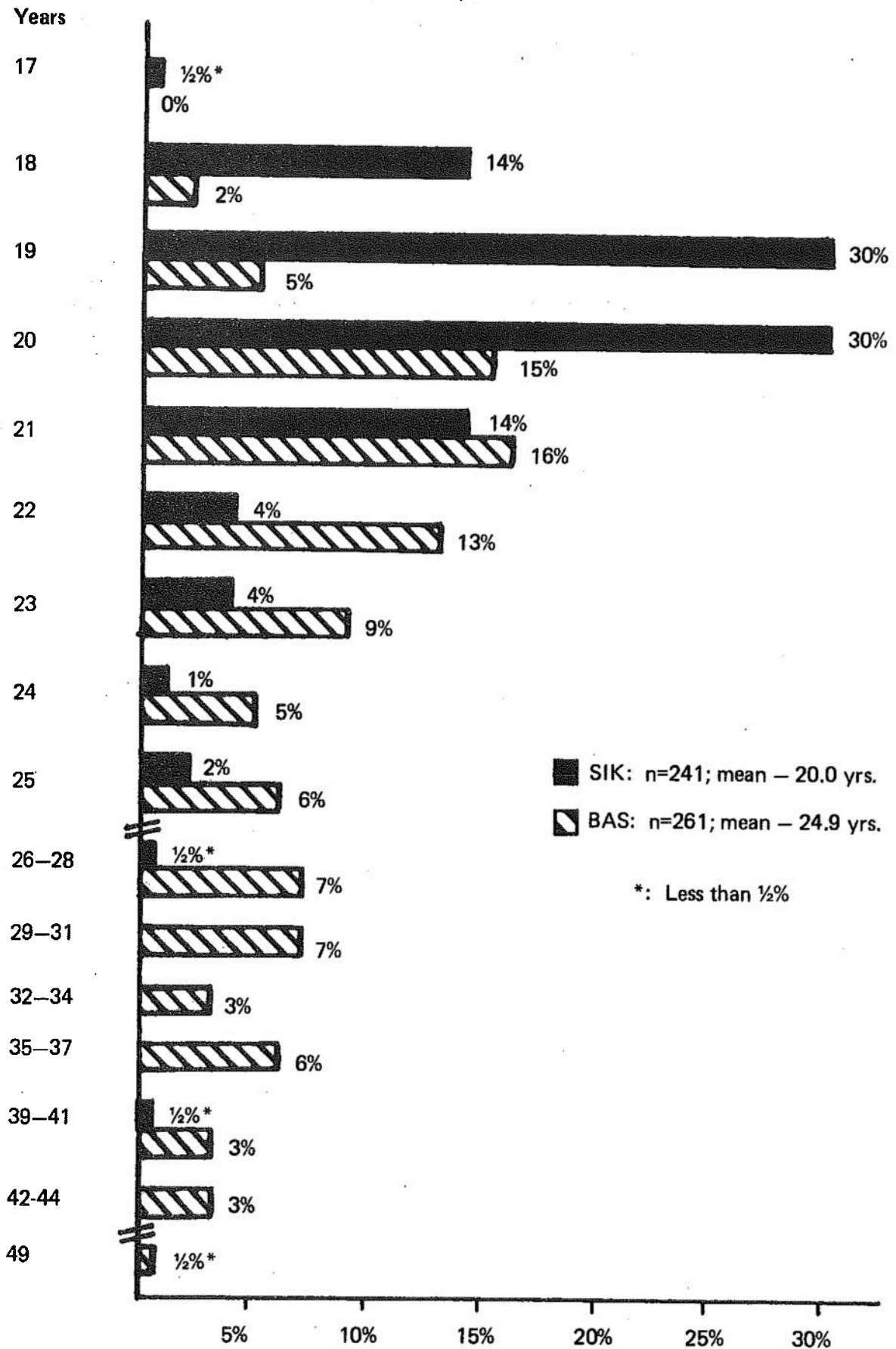
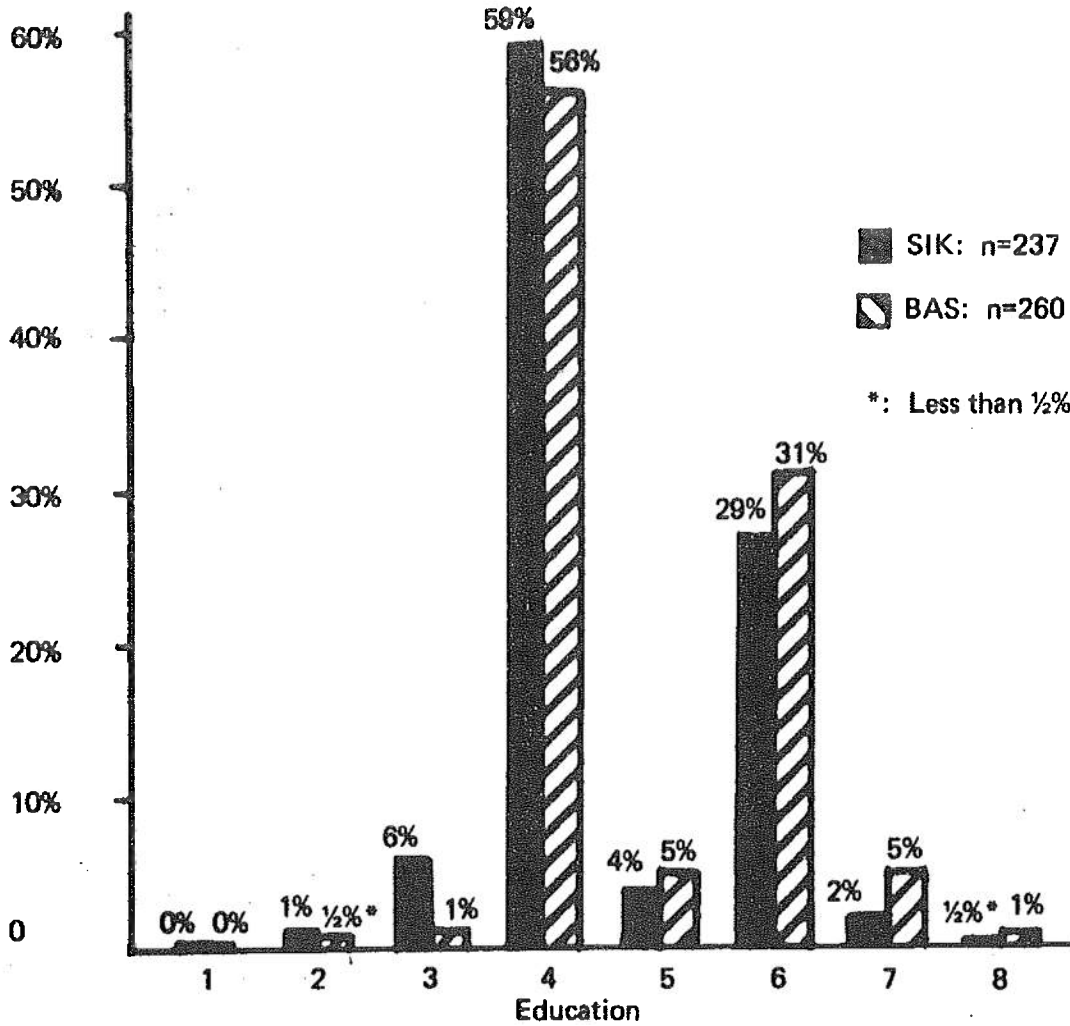


Table 44

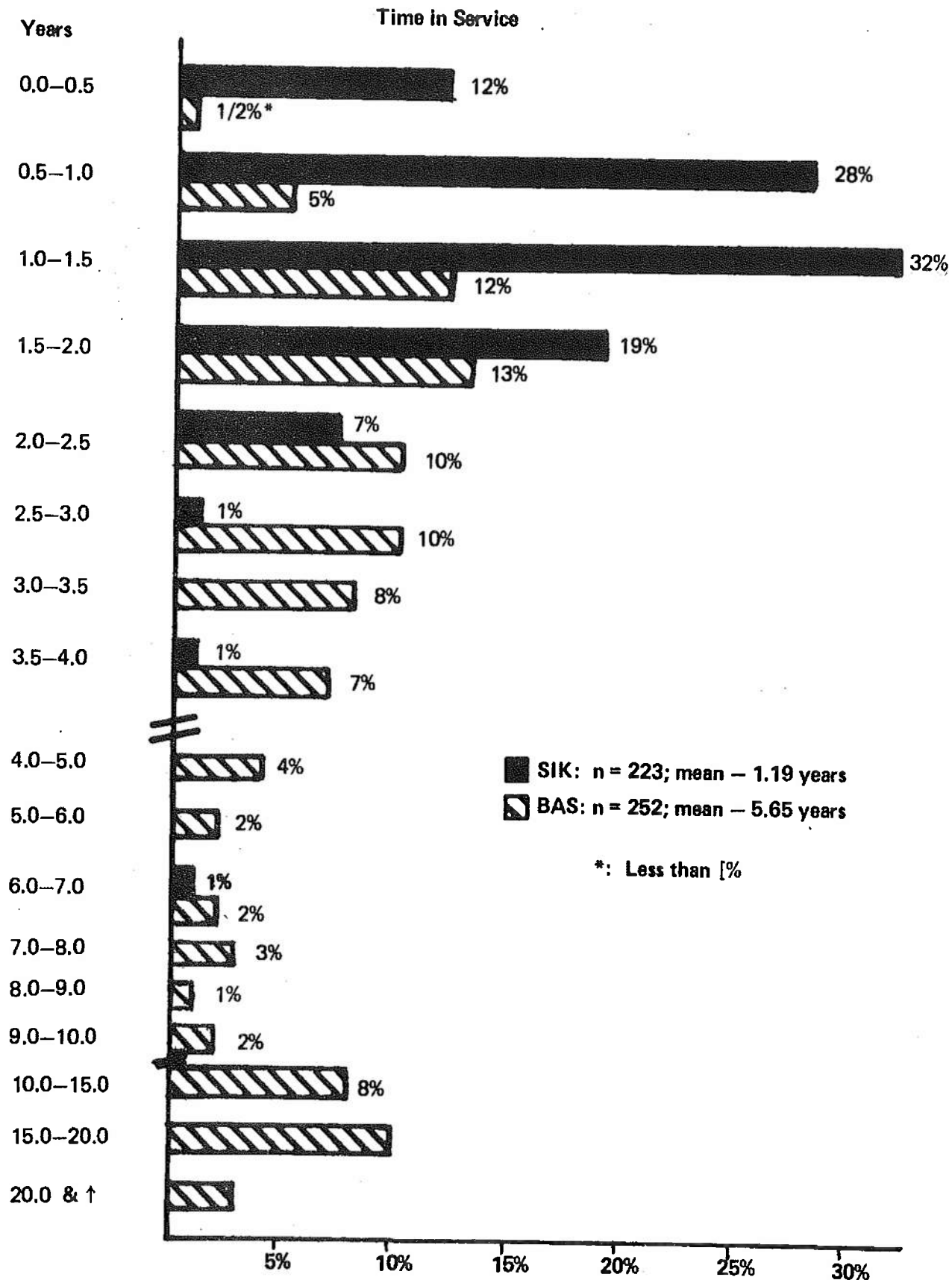
Educational Level of Sample



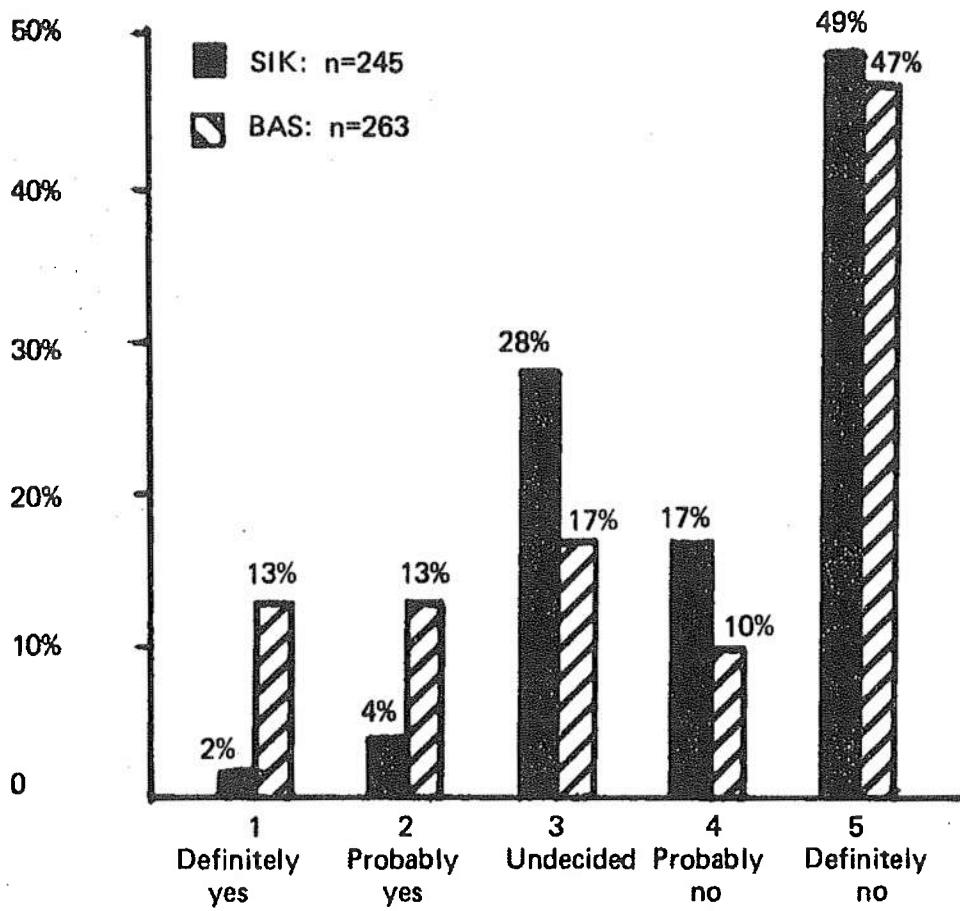
- Legend:
- 1. Some grade school
  - 2. Finished grade school
  - 3. Some high school
  - 4. Finished high school (includes GED)
  - 5. Skilled job training
  - 6. Some college
  - 7. College graduate
  - 8. Beyond college



Table 45



**Table 46**  
**Reenlistment Plans**



**Table 47**  
**Reaction to Military Service**

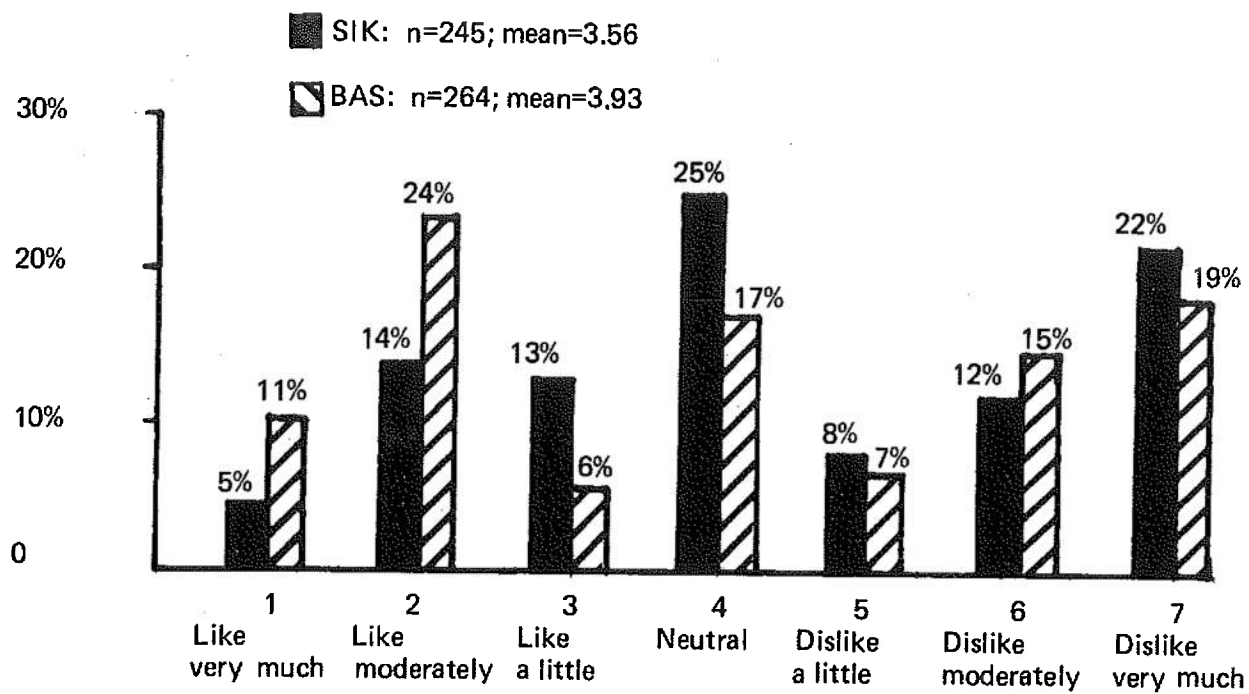
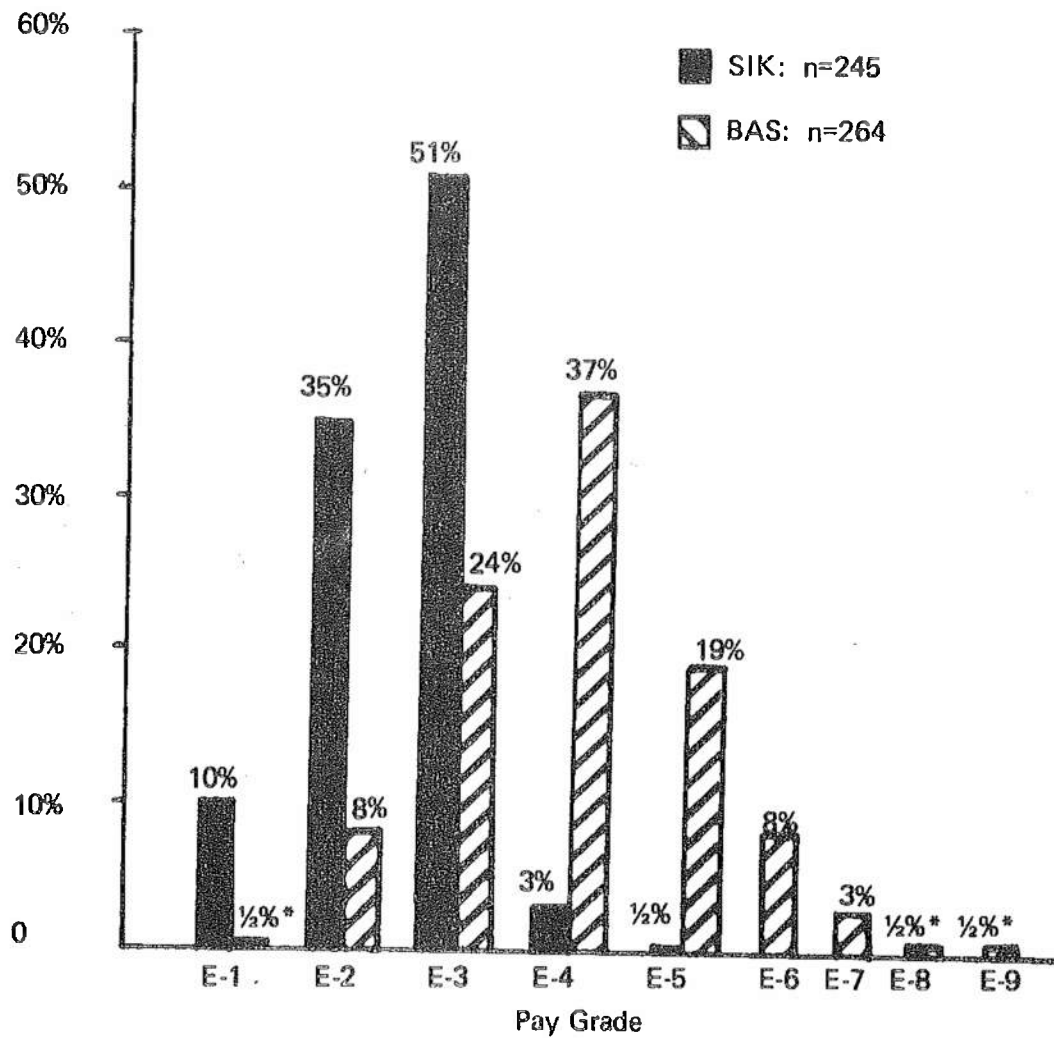


Table 48  
Pay Grade of Sample



\*: Less than ½%

**Table 49**

**Rural/Urban Background of Sample**

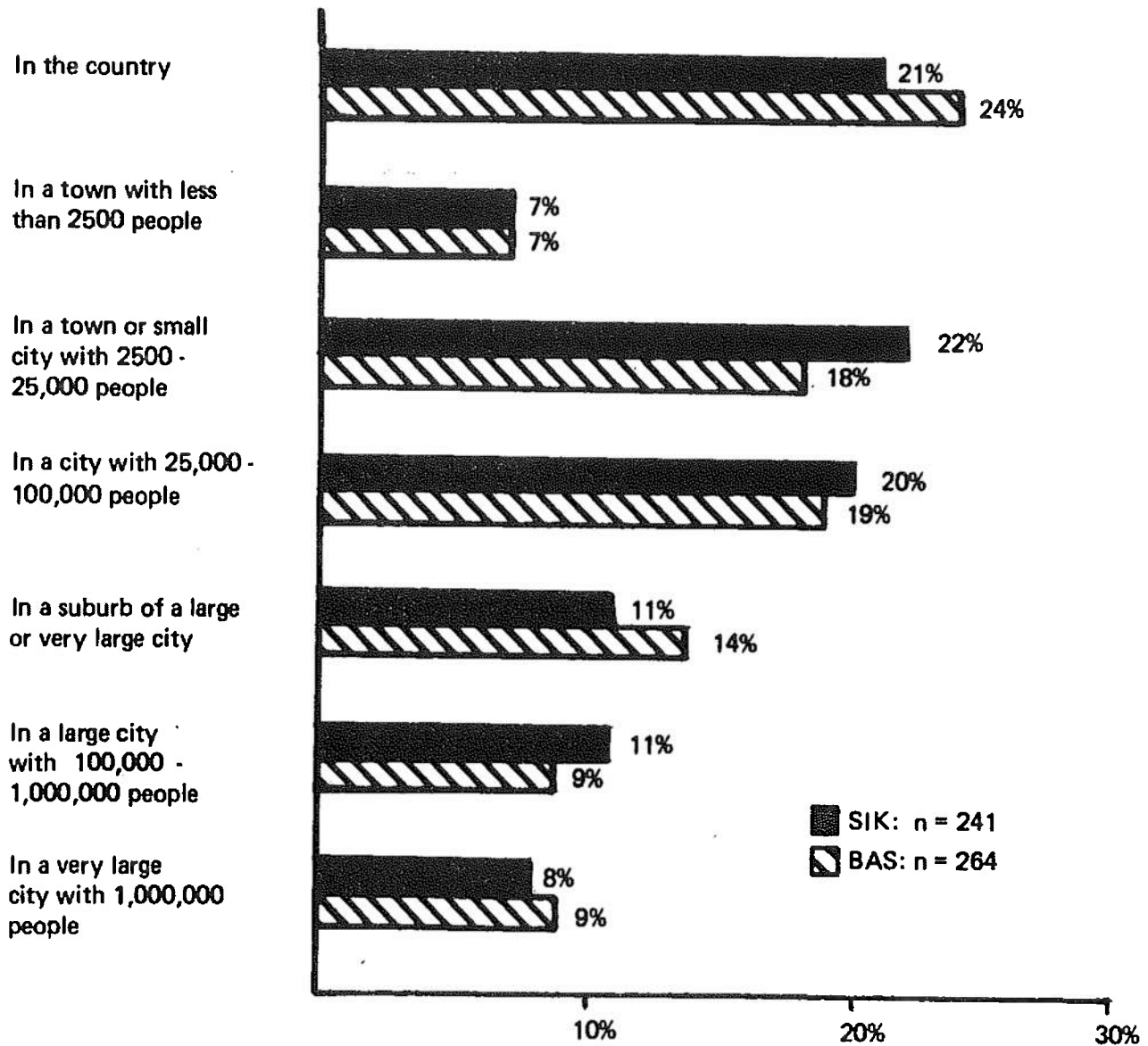
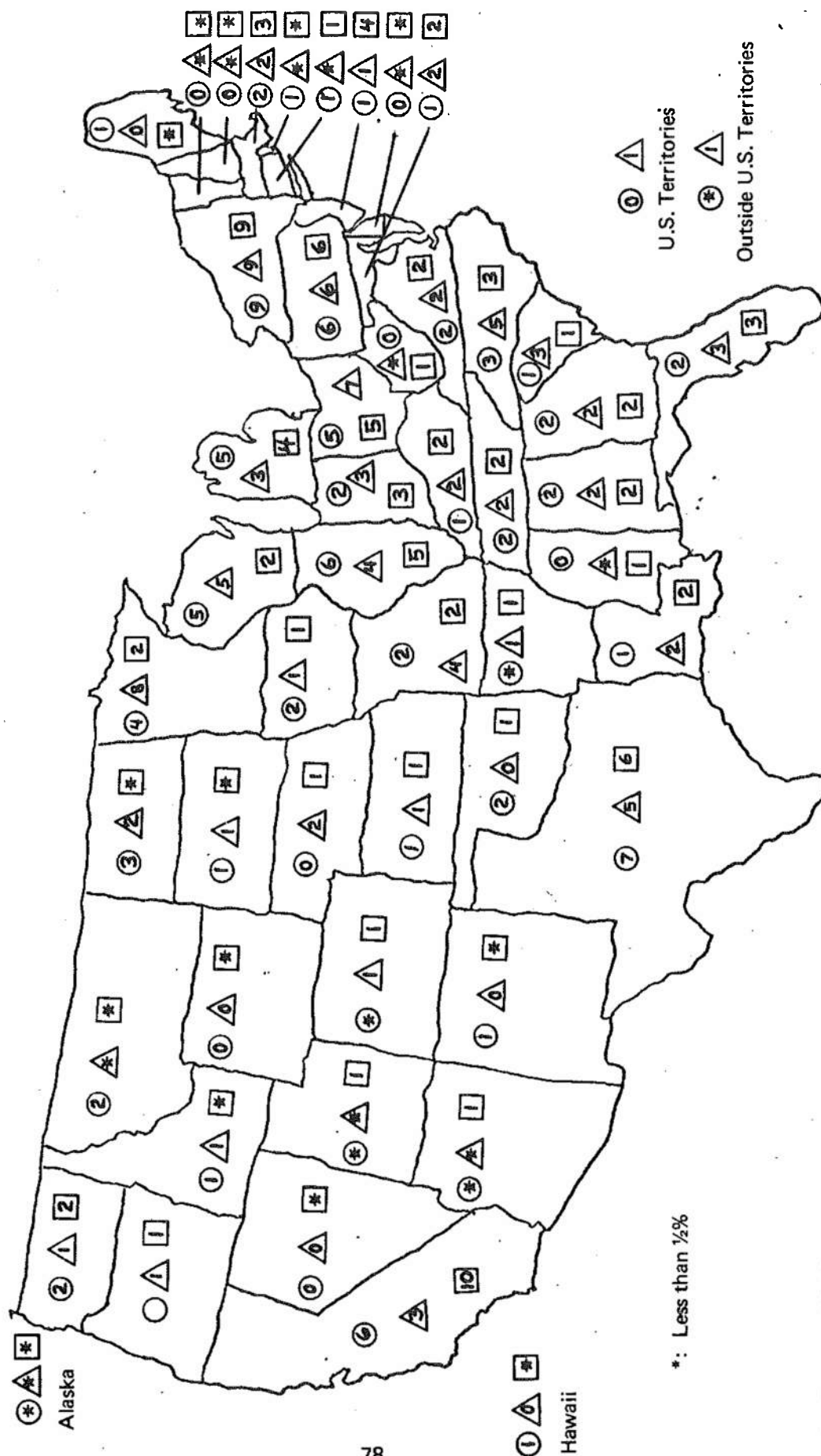


Table 50

Geographical Origins of Sample



### APPENDIX III

Survey research typically utilizes probability sampling, from which estimates of error can be derived and confidence in precision achieved. Notwithstanding that the sampling frames (the lists or records) upon which to draw a probability sample are woefully inaccurate (the survey team found many instances of individuals listed as receiving subsistence in kind who in fact had been receiving the basic allowance for subsistence for 10 years and more), we could proceed with a straight forward manner. Theoretically we could correct the frames, draw the sample, and collect individual data. However, the time, effort, and cost of data collection by this method can be drastically reduced by group administration which however presents other problems. If Airman First Class John Doe is selected by probability from cleaned frames, the experimenter has no guarantee that the selected AIC John Doe will be present. If the experimenter emphasizes the participation of the selected individuals, the experienced experimenter finds others have been substituted. If the experimenter emphasized no substitutions, absenteeism is so large that the sample is usually biased. Therefore we accept a group administered, non-probability sample, and increase our sample size considerably to insure the stability of our data. Hence our data is reliable, but the large sample sizes make tests of statistical significance practically meaningless. For example, consider the group means presented in Table 6. Because of the large sample sizes and the typically small standard deviations of the scores, a mean difference of 0.06 to 0.09 is statistically significant (even without the correction term for large samples, which produces statistical significance for yet smaller mean differences). Therefore, the mean response of the SIK group to the variety of regular meal foods on weekends (2.01) is statistically a more significant ( $p < .05$ ) reason for non-attendance than the quantity of food (1.94). Clearly this type of argument is not necessary for the development of improvements in the existing food service system. Inclusion of measurements of statistical significance will be inserted only where it will serve to clarify an issue.





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13. ABSTRACT

Opinions were elicited from 509 enlisted personnel at Minot AFB to determine various elements related to food service, including the background characteristics of the samples, their meal patterns, which factors influence attendance and which factors are viewed as problem areas, their evaluations of the quality, variety, and quantity of the food as well as several other non-food features of Air Force food service. The results indicated among other things that not just those who dislike military service dislike Air Force food service, the traditional assumption of 21 meals a week is invalid for these groups, and quality of the food is the most serious problem. Additional recommendations are presented in the text.

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